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NEW ATARI USER

The Resource for the ATARI CLASSIC and the ATARI ST

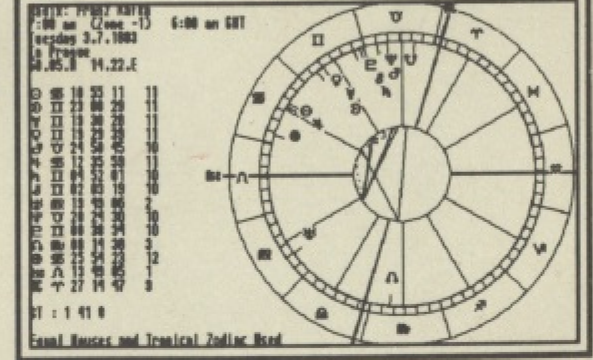
Issue 73 - August/September 1995 £2.50

FOR THE ATARI CLASSIC



- ***THE DISK COMPANION***
  A superb utility to help get your disks in top shape
- ***HIT THE JACKPOT!***
  We provide the numbers for you to win the National Lottery
- ***8-BITS IN A PC WORLD***
  A look at how the future might be

FOR THE ATARI ST



ITALIA '95

Domark's last ST program?

PUBLIC DOMAIN *a concluding look at the Budgie range*

PLUS .... A NEW MENU SYSTEM ... ZORK 1 ... JOURNEY INTO CYBERSPACE ...

This issue's ....

Thanks

Les Ellingham puts it all together and fills up the gaps but the real thanks goes to the following who made this issue possible

Sandy Ellingham who takes care of all the office work, advertising and mail order

For their regular contributions

John S Davison ***Allan J. Palmer***
Paul Rixon ***Stuart Murray***
Ian Finlayson ***Mark Stinson***

For their contributions this issue

John Foskett ***Joel Goodwin***
Linda Naysmith ***Brian Kennerley***
Graeme Fenwick ***Kevin Calford***
Dave Parrish ***Peter Kirton***

Thanks to all who continue to support the magazine and the PD library. Your continuing support is needed more than ever

Some of these folk have supported us from almost the beginning and without them we would not be here. Some are having articles published for the first time. All are to be thanked for sharing their enthusiasm with all who read New Atari User

Inspiration

Two pieces of inspiration this time, one brand new and the other a little older. Brand new was Days Like These by Van Morrison which shows a welcome return to form albeit not as strong as a few years ago. It is certainly better than his last one but then that doesn't take much doing! Tracks like the title track and Ancient Highway create that unique feel that only Van Morrison can give. The other is Annie Lennox's Medusa which is on as I type. I was haunted by No More I Love You's (didn't like it at first) and was hoping the album would be as good. Sadly it is not. Five great tracks and the rest just listenable, but those five sure help to while away the time. The only other plays were from Martina MacBride and Kathy Mattea who were mentioned last time.

HOW IT'S DONE

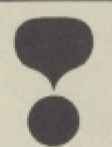
PAGE 6 shows just what you can do with your Atari. NEW ATARI USER has always been created entirely with Atari equipment, initially on the XL but more lately with a Mega ST and other stuff, who needs PC's or Macs! Hardware includes a Mega ST2 (upgraded to 4Mb), SM125 Monitor, Supra 30Mb Hard Disk, a HP Laserjet III, Citizen 124D printer, Philips CM8833 monitor, 130XE, a couple of 1050 disk drives, 850 interface, NEC 8023 printer. Principal software used is Protext and Fleet Street Publisher 3.0. Other software includes Kermit, TariTalk, Turbo Basic and various custom written programs on the XL/XE. Articles submitted on XL/XE disks are transferred across to the ST via TARITALK. Programs are coded on the XE and printed out directly for pasting in after the typesetting is completed. All major editing is done with Protext and pages are laid out with Fleet Street Publisher. Each page is output directly from Fleet Street to a HP Laserjet III which produces finished pages exactly as you see them. All that is left is to drop in the listings and photos.

Well, it's not quite as easy as that but you get the idea!

CONTRIBUTIONS

Without contributions from its readers, NEW ATARI USER would not be possible. PAGE 6 welcomes and encourages its readers to submit, articles, programs and reviews for publication. Programs must be submitted on disk or cassette, articles should wherever possible be submitted as text files on disk. We seek to encourage your participation and do not have strict rules for submissions. If something interests you, write a program or article and submit it!

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Editor & Publisher: Les Ellingham - *Advertising:* Sandy Ellingham
Page layout by PAGE 6 - Printed by Dolphin Press, Fife, Scotland 01592 771652
NEW ATARI USER is published bi-monthly on the last Thursday of the month prior to cover date

PAGE 6 PUBLISHING's NEW ATARI USER

'The Magazine for the Dedicated Atari User'

ISSN No. 0958-7705

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Editorial copy date is 31st August

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Editorial

A few years ago someone in the States came up with a device to use a PC keyboard with the Atari Classic. I thought it was a waste of time. Then someone else worked out a way of using a PC as a sort of disk drive for the Atari. How many people are going to be interested in that, I thought. Then the PC Xformer came along which allowed you to use a PC to emulate the Atari Classic. I wondered whether there would be enough interest even to mention it in New Atari User.

In recent weeks, however, at least half a dozen readers and contributors have told me that they have a PC and are very interested in running Atari software on it. So I guess I have been wrong and I therefore make no apologies for devoting several pages this issue on ways in which you can use a PC to run your Atari software. A couple of years ago our regular contributor Paul Rixon sold his ST and bought a PC and he was obviously on the right track. We have to face the fact the in a couple of years, or even sooner, there will only be one type of computer in home use. The PC will rule.

The ST is dead. The Amiga is dead. So is every other 16-bit, non-PC computer. What is remarkable is that there is still a strong enclave supporting the Atari Classic. The reason is that you can still do things with the Classic that you could never do with the more technologically advanced computers. You can write your own programs, adapt other people's programs for your own use and enjoy just tinkering about with the computer. All without a great deal of computer expertise. Just read a few articles in New Atari User and you can do something new with your Atari.

That's what keeps the Classic alive. Sharing what you do with others will keep the Classic alive even longer.

NOT SO EASY AFTER ALL

Putting this issue together was rather strange. I sailed through the first forty or so pages and thought I might complete it in record time. Then it slowed down as I tried to find material to balance out some of the heavier stuff. It was especially hard to decide on the bonus for this issue. We do still have a lot of useful contributions for future issues but we still need more to create the right balance.

Programs that we can use for our disk bonus are especially needed so if you have anything suitable please share it with others. If you are a programmer that has had your work released commercially in the past, how about giving us permission to feature some of your games that are no longer on sale? Perhaps games that were never released. A few years ago the author of Joe Blade gave us permission to use an unpublished game called Aquatic Capers but there was a mix up on the disk and the game was not on it! Unfortunately we could not get in touch with the author again.

If you are a commercial programmer, or you know some of the big names of the past, how about sharing some of your work with the remaining faithful? There is no longer any chance of a commercial deal with the Atari Classic but you can at least show your programming talents off to the Atari world.

STILL MORE SOFTWARE

All the short supply items from The Accessory Shop are gone but there is still plenty left. Take this chance to buy all the software you can before it all disappears. Remember we are talking about just a pound or two for software that was made to retail at up to £15. You can't go wrong!

Les Ellingham

Bits & Pieces

A couple of programming tips from John Foskett

MIMICKING TURBO's "DO-LOOP" LOOP

Turbo Basic's infinite DO-LOOP loop can easily be mimicked in standard Atari basic by using ....

```
FOR X=0 TO 1 STEP 0
"
"
"
NEXT X
```

This works on the principle that with a zero step, the variable X can never equal 1 with the result that the loop can never end. The loop is then said to be "infinite" just like Turbos DO-LOOP loop.

CHANGING VARIABLE NAMES IN TURBO BASIC

Have you ever needed to change the name of a variable, a string or an array when using Turbo basic? If so the answer is easy. Save your Turbo program to disk and boot an (orignal) Atari User Toolkit program work disk and load your Turbo program. Don't run it because it won't run and simply use CHANGE in the normal way. Save your amended Turbo program back to disk and reboot Turbo basic and that's it!

Mailbag



Another excellent set of letters this time - keep them coming!

Well, it's Mailbag time again. Luckily the heatwave at the end of June has abated long enough for me to toil over a hot 130XE deciphering your letters and transferring them to a disk for Les to process into the next issue. Onward!

Allan J. Palmer

8-BIT DEDICATION

Here's something unusual to start off with - Jason Kendall of Thurlby writes that he's called his "Fantasy Football" team 'Bounty Bob's Ball Basher' - after the Miner 2049er and Bounty Bob Strikes Back character! When he wrote (back in February this year - the letter was lost in Stafford for a bit ...), Jason's team was 38th in the Daily Telegraph list of Fantasy Football teams. Well, Jason, the question is: how did you finish the season? Jason is also interested in knowing if there are any other Atari Classic owners with a FF team.

BARGAIN

Jason Kendall also reports that "...via NAU's Contact column he bought a 1050 disk drive for only £25 and am very pleased with it. I intend now to have a crack at some RPGs like Alternate Reality and another attempt at Ultima III - games which required a fair amount of disk swapping on a single drive system. Incidentally, can anyone tell me how to increase magic levels in "Ultima III"?

➡ *Jason also has these observations about the menu on various PD disks:* "I generally buy games and use a joystick to control my XE as the keyboard is underneath the TV in the corner of the front room. The problems with the menu are twofold - (1) you have to use keyboard to select/load up menu, press a key, etc., and (2) some games are BASIC, some are Binary and therefore require re-boot with Option held. My solution has been to amend the 'File Manager II' menu as printed in Atari User that will autoload, allowing joystick selection and turn off BASIC if you try and load a Binary file. Can a similar menu be used on future Page 6 disks please?"

TRANSFER UTILITY

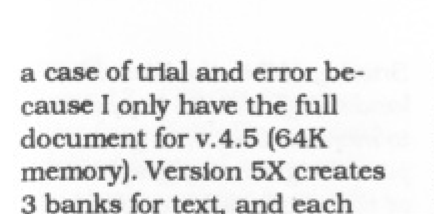
Finally, Jason asks for help in transferring from tape to disk: "I have successfully transferred "Theatre Europe" onto disk using TransDisk IV but it will not save either to disk or tape when playing the game. Has anyone got a utility to put a boot tape disk into a DOS format object file?"

EXPANDED MEMORY USE

Dennis Fogerty from Salisbury responds to Nigel Henry's recent question (issue 71) about "...applications which make use of the increased memory from a 256K upgrade. If he is into Word Processing I suggest he obtains the XE version of TEXTPRO Word Processor. This can be found in many PD Libraries but, unfortunately not Page 6! I am using the PD Beta test version 5X from D.G.S who advertise in most issues of NAU. Unfortunately, the disk only has update documents so, in my case, it was a case of trial and error because I only have the full document for v.4.5 (64K memory). Version 5X creates 3 banks for text, and each one holds 15,872 bytes - a massive total text memory of 47,616, which is a godsend for any serious wordprocessing user. Those not into wordprocessing can still benefit from this disk for loading the very lengthy document files that appear on disk from time to time, (the docs which, with a standard 64K wordprocessing, need special link-load/save processing to view from beginning to end). D.G.S. also has TEXTPRO v.4.56XE available on 2 DS/SD disks, one of which contains the full manual for printing. I guess this, too, will provide 3 memory banks but, not yet having purchased it, I cannot comment."

❢ *[I am not sure of the status of TextPro 5.2. A report in Current Notes last year indicated that it was Shareware, available only to registered users of earlier versions but other reports seem to indicate that it is PD. If is it genuinely PD, then could someone send us a copy as I cannot seem to locate a source. Ed.]*

➡ *Leslie Benson from Hythe, Kent also has some comments on Nigel Henry's query about* "...Beta Lyrae not working on machines with extra memory. I had the same trouble when I transferred this program from cassette to disk and also when I transferred Speed Run from cassette. Both worked perfectly on my 65XE but although loading into the 320XE neither would run I haven't been able to find out why, but by fitting a Computer House Controller Card to my 65XE I was able to make a copy that would work on the 320XE and also on a 800XL with 256K memory."



HOWFEN HELP

Leslie Benson also offers the following advice to Stan Shearing about his problems with HOWFEN tape to disk transfer: "I would recommend in future that Stan uses the HOWFEN menu program and not the tape to disk transfer. All is not lost, however, if he creates a HOWFEN menu with HOWFEN DOS 3.07 he will be able to use the facilities of that program to transfer his boot disks to the menu. It is advisable to use the enhanced density option as many of these games are over 350 sectors long. Do not use the double density option - this always gives me trouble. It is not possible to transfer normal boot disks to HOWFEN unless they are single load, which very few are these days. As a matter of interest, in single and enhanced density, the HOWFEN menu uses sector 7 to store the sector numbers for each file. Byte $29 is the number of files on the disk. Byte $2A is the low byte of the address of file 1 and $3E is the high byte. Bytes $2B and $3F are the low and high bytes of file two, and so on. The filenames start at sector two but are in the Atari internal code and not ATASCII."

❢ *[Just as an aside, my memory tells me that in the early days of the Atari Classic in the UK (c. 1981/2), HOWFEN products were available on mail order from AWG (A.W. Gray?) Software - does anyone know what happened to this Atari supporter?]*

➡ *Also supplying comments on Stan's HOWFEN problems is W.A.C.O. M. Tomlin of Basildon, Essex:* "I don't really know what Stan meant when he said he could only get one game per disk as HOWFEN DOS has a menu system and you can get a lot of games on one disk, I suppose he is just making the boot disk which only makes one game per disk. I have used HOWFEN DOS to transfer the following with complete success - Pharaohs Pyramid, Jawbreaker, Spyhunter, Darts, Pacman, Typo Attack, Pengon, One Man and his Droid, Centipede, Quasimodo, Chess, Realsport Tennis, Vegas Jackpot, Decathlon, Crystal Raider, Eastern Front, Submarine Commander, Arena 3000, Dig Dug, Air Strike II, Aztec Challenge, Diamonds, Thrust, Kickstart, Bug Off, Missile Command, Pole Position, War Hawk and Star Raiders.

The following load but put



garbage on the screen - Lone Raider, Strip Poker whilst Frogger and Zaxxon, lock up once loaded. I cannot get the HOWFEN DOS to load in Elektraglide, Mediator or Chop Suey. I have had 90% success with HOWFEN DOS."

PENPALS

M. Tomlin has a complaint that he'd like to air: "When I respond to penpals wanted, I put pen to paper and often send them at the same time a greeting disk full of PD Software for their amusement and bang! - that's all you ever hear. Sometimes the post to Australia costs £1.50p but I have a couple to write to in issue 71 - maybe I will have a bit more luck this time. My thanks go out to all New Atari User readers who keep coming up with all sorts of interesting things which keep me up all hours."

1050 PROBLEMS, AUTORUN.SYS

M. Tomlin adds these comments on various matters: "re Dennis Hedges 1050 problems - it sounds like a faulty on/off switch or around this area, but I would advise Dennis if he doesn't know what he is doing to leave alone and send his drive to Derek Fern of Micro Discount or someone who knows what they are doing - a little poking around with this sort of thing will make it worse.

In issue 70's Mailbag, Brian Arnold was having trouble with the old Atari User Toolkit, you were right to say that it was on disc also, if somebody would like to send me a tape copy I will attempt to convert it to run from a AUTORUN.SYS file, as I have done this sort of thing many times with other tape programs and have had 95% success in doing so, that is of course if Page 6 don't mind as they must hold the copyright to this program. If I can I will of course return to Les (Page 6) the finished AUTORUN.SYS file so it can be put in the Accessory Shop."

1027 QUESTIONS

From Chaddesden, Derby, Michael Allsop has some queries about his 1027 printer: "Which codes do I need to send down to a 1027 printer in order to print the sterling (i.e. currency) pound sign, and any other special functions? I understand that this has been answered before in NAU, but no-one I know knows where. Also, what sort of ink is suitable for re-inking the 1027 roller?"

Well, as I was about to start looking the answer up in the many dusty tomes I've accumulated, I found another letter in the Mailbag - from Brierley Hill in the West Midlands, Jeff Willetts happens to mention that "...to get a pound sign in any graphics or text mode, add to your program list POKE 756,204 without a line number; then at the start of the line on which you wish to use it, again type POKE 756,204. At the place you want to print the pound sign, type Control+H. When you run the program a pound sign will appear on the screen."

OK - that's just an extra bit of info for anyone who wants to know how they can get a pound sign displayed. Looking back to issue 16 of PAGE 6, I found an article by Phil Rae discussing 'AtariWriter and the 1027'. Phil identified that to use the pound sign (or any of the international character set) in an AtariWriter document, "...you first need to use AtariWriter's [CTRL+O]27 [CTRL+O]23 commands to turn the international character set on, then use [CTRL+O]008 when you want to include a pound sign. All of the other international characters can be printed by typing [CTRL+O] followed by the appropriate decimal code as given in the 1027 manual." Chris Read also added more info in PAGE 6 issue 25's letter column. Can anyone supply a list of these decimal codes for people without 1027 manuals? What are the equivalent to the [CTRL+] commands for other word processors? Could anyone supply a 1027 tutorial for a future issue?

Issue 17 of PAGE 6 had a letter from Keith Berry which advised to avoid using ordinary stamp pad ink to re-ink 1027 rollers; Keith recommended using "...thicker ink that had been formulated for use with metal dies such as automatic enumerators and cheque signing machines."

PORTUGUESE POWER PROBLEMS

Michael Allsop also replies to last issue's tale from Eddie Jones about PSU difficulties: "He was sensible/correct to use the Portuguese PSU - it would be designed to run at Portuguese mains voltage (220V I think). All XE's run at 5V regulated DC, so the PSU is not the problem. If on power-up the TV screen goes from "snow" to blank, this is a good sign as it indicates that the ANTIC/video system is working. I have had some success repairing XE's and find that the most common fault is simply a faulty DRAM memory chip. A single faulty DRAM will render the XE inoperative. Custom chips may also be faulty - this is obviously a problem as they cannot be bought, but the other dud XE could be robbed to effect a repair. The use of IC sockets for replaced chips will ease any future servicing. The PCB is of high quality and is hard to damage. Nevertheless, extreme care with proper tools should be used as PCB faults are messy to fix and murder to find."

Brad Rogers from Southampton also adds some comments: "I don't know what the mains voltage and frequency are in Portugal, but can offer some general advice about PSUs. First plugging an AC output PSU into equipment expecting a DC input may result in damage to both units. Obviously the same applies to DC output PSUs and equipment expecting AC. Secondly, using a power supply with either a voltage or current rating too low, will likely to result in damage to the PSU not the computer. Here in the UK, mains voltage is 240V This is as high as can be found almost anywhere in the world. The frequency used in the UK is 50MHz. Most countries use 50 or 60 MHz. However, voltages are more problematic, since the two bands used are quite broad, falling in the range of 110-120V or 220-240V. Interestingly, the second group is exactly double that of the first. Using a 120V PSU on a 240V supply is likely to damage the PSU. Using a 240V PSU on a 120V supply will result in the output being virtually nonexistent, without much risk of permanent damage. Further note, it is the equipment that is connected to a PSU that draws the current it requires. The PSU can't force more current into a device than the device wants. (This ignores constant current PSUs, which aren't relevant here anyway).

Taking note of the 50 or 60 MHz frequencies used, it can be explained why (most) clocks for the Atari don't work correctly in the UK. Quite simply, they are expecting a frequency of 60 MHz, and base all calculations on this frequency. Using a 50MHz supply, as we in the UK do, results in the slow running of the clock."

HARDWARE and the NET

Brad Rogers continues with these observations: "It's good to see that there is new hardware coming onto the 8-bit scene. First, a cartridge port adapter, to allow more than one ROM cartridge to be connected at once - something that has been lacking on the Atari for a long time. Second, the hardware/software combo of a disk backup utility. As Les said, these are probably essential nowadays as a result of ever diminishing supplies of the older software. Let's hope it doesn't bring about a further bout of piracy, leading to an even earlier death of the 8-bit Atari.

Finally, I was pleased to read about John Davison's ex-



ploits on the InterNet. For those that are interested, I can be contacted on the InterNet and FidoNet. FidoNet is a free network similar to, but not directly connected to the InterNet. The addresses are as follows:

InterNet brad@pianosa.demon.co.uk
FidoNet 2:251/48.15

Should anybody contact me by either of these methods, they'll find out something about me that I would never admit to in these pages. Now if that isn't incentive enough to try, I don't know what is!"

MONITORS

Robert de Letter from Zelzate, Belgium sends this information regarding a suitable monitor for the Atari 8-bit: "Sony is still producing composite video/RGB colour monitors. The KX-1410QM is a 14-inch monitor and the KX-2110QM, a 21-ich colour monitor. I've just bought the KX-1410QM (made in the UK!) and I can highly recommend it. I've never seen such vibrant colour before; audio is built in, and also a mini-jack for external mono/stereo speakers. Both monitors are multi-standard (PAL, SECAM, NTSC). Both monitors are equipped with audio/video input and video output, and a 21 pin SCART connector. The price is professional too - 18,000 Belgian Francs - approximately £367, but BTW (VAT) is extremely high in Belgium - must be a lot cheaper in the UK."

❢ *Thank you for that information, Robert. Unfortunately I haven't had the opportunity to contact my local Sony Centre for details of the monitors you describe. I'd forgotten that other countries have higher VAT equivalents! Incidentally, I had somewhat of a whirlwind visit to Belgium at the end of May when I travelled to Lier in company with the 80 members of "Cavalier Marching Brass" (a youth marching band of which my daughters are members), their staff and about 100 supporters to watch the band compete in the European Band Championships. It turned out to be a great weekend, as the Cavaliers were placed first by the international judges - winning the overall contest against over 60 other entries and they are now the reigning European Showband Champions!*

FILE SEGMENTER

Leslie Benson of Hythe, Kent also has some ideas in answer to Stan Shearing's issue 71 problems with Dave Sargeant's File Segmenter (issue 66); Leslie suggests "...the following amendments to the program -

Line 280 change :GOTO 230 to :GOTO 220

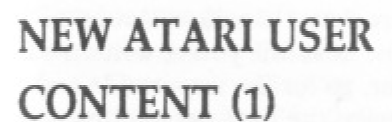
This is sufficient to make the program work with the 130XE version of AtariWriter, but the XL version is limited to a buffer length of about 12600 bytes. Stan should therefore change BSIZE in line 120 to this figure. There is one other point about the program - line 190 asks for the filename, but it is not until line 220 that you are instructed to insert the source disk. This results in an error 170. Probably the most straightforward way over this is to add:

```
185 ? "Insert source disk,
press RETURN";:INPUT
#16;DUMMY$
```

Sorry not to have got around to this before but I am sure Stan will be glad to have the program working. Incidentally, the SuperDOS doc file breaks down into four segments."

BACKING UP ATARIWRITER

Jeff Willetts of Brierley Hill in the West Midlands has an answer for Eddie Jones' issue 72 query about making a back up copy of AtariWriter: "COPY256E from the MYDOS 4.50.1M disk (came from Micro-Discount with a 256K upgrade) makes a good copy. But with this and other copy programs you must write protect your disk before you try to run it as it writes back to the disk and will not load."



NEW ATARI USER CONTENT (1)

Gordon Talbot from Peterborough has a complaint: "Do I really pay out my hard earned (begged, borrowed) money to subscribe to a user group and New Atari User just so that I can read the same article in both magazines within 2 or 3 months of each other? I'm referring to the article about noisy 1050 drives that was in issue 72 of NAU. I couldn't believe it when I turned to page 40 - it must be different I told myself; but no, there in black and white was the same feature, apart from a few changes to certain words. Whether this was by the author himself or the editor doing his job, I'm not sure. What I am sure of, is the fact that it meant two pages less to read in an otherwise faultless publication. There wasn't the usual "Reprinted by permission of ..." acknowledgement anywhere to be seen - mind you, I wouldn't have thought it would have been reprinted that quickly anyway. Of course anyone not subscribing to the user group wouldn't have seen the article before, so they were the lucky ones. I do think that NAU could have checked beforehand to make sure the article hadn't been printed elsewhere before. Having said all this, I still enjoy reading NAU and will continue to stay with it for as long as it remains available."

❢ *This sounds like a job for the editor/publisher to answer. But before I hand over to Les, I'd just like to note that I would expect contributors to indicate that they've submitted articles to other magazines (in this case the TWAUG newsletter) - the article may have been in NAU's inventory for a while.* ***[What often happens with articles is that we hold them for some time before publishing, usually for reasons of balance in each issue. The article you refer to had been with us for some time but it seemed to fit nicely into Issue 72 which had a couple of other articles on disks and so it appeared. Often, when an article doesn't appear after a few issues the author thinks that it is not going to be published and sends the article somewhere else. It is rare for the author to let us know that this has been done. If articles are published in club newsletters either before or after being submitted to us there is usually no way of me knowing as we do not receive copies of any club newsletters on a regular basis. TWAUG used to send their newsletter but no longer do so and the only complimentary publication we now receive is the American Current Notes. If I reprint something from that, it will always be acknowledged as such. How about swapping the situation about? We have always said that User Groups could reprint material from Page 6 and over the years dozens around the world have done so in their newsletters. Some, unfortunately, have not credited us as the original source but we have let that go. Does reprinting material from Page 6 make a club newsletter any less valuable to its members? I don't think so.***

We have to accept that, from time to time, this sort of duplication will occur but I don't think it is a big problem. For some it will be a waste of a page or two but for many others it will be something new. Let's just accept it and be thankful that people still want to write about the Atari. The last thing I want to do is put them off. Ed.]

NEW ATARI USER CONTENT (2)

From Sittingbourne in Kent, James Austin responds to last issue's discussion of the listings format: "I have come up with several ideas about how listings could be incorporated into the magazine again. Issue 72's listings are much better, the inverse characters are actually readable this time, and as a whole the listings are much more acceptable. There are also more listings in the magazine this time - this can only be a good thing for the magazine as a whole, but the big program listings are sorely missed. Now that the Accessory Shop is being closed down, why not use the extra pages



for more listings? There is also another way in which listings could be kept - any huge listing could be could be contained in a type of listings section in the middle of the magazine, so they could be pulled out as and when needed. This would be preferable to sending off for them and arguably would be cheaper for all parties concerned. At the moment Les is paying postage for the magazine and any listings required, as well as paying photocopying costs and keeping poor ol' Sandy constantly on the 'phone. Let's face it anyone who is not on a disk subscription would want the listings, and even for people on disk subs it is handy to have the listings for reference anyway - so why only send them when asked for? Enclosing the listings in the magazine would save around half the postage costs. If we have to stick with the same format and considerable listings have to be printed, why print them in this condensed format? An A4 page consists of two A5 pages, right? Then print them ACROSS the two-page spread. I believe that I confused some of you when I mentioned reductions in size; back before the magazine became NEW ATARI USER, PAGE 6 used to print the listings in 3 columns,yes THREE. Look at 'The Font Factory' in issue 31 for an example. The listings in that issue are arguably clearer than the new condensed format. Two columns of listing of that size would fit on an A5 page quite comfortably, and allow for borders and titles to be added as well. Sorry if I confused any of you, but I'm not the clearest of writers at the best of times..."

Well, there's some more thoughts for Les on the listings debate. Once again, I hand over to our esteemed editor for his views. Over to you again, boss. [The whole issue is one of economics. We cannot include extra pull-out pages just for listings and whilst it is true that an A4 page is two A5 pages it does mean that a listing that takes 8 pages out of 64 on an A4 size will take 16 pages in A5 size. I feel that 8 pages of text is more valuable to our readers than 8 pages of a single program listing. I believe that we have got it about right as, in fact, only a handful of readers request the type-in listings and it is no bother for us to mail out the small number of listings requested. As for the quality of print last issue, it was better because I used an old ribbon! Normally I use a new ribbon for the listings and whilst it looks fine on the master copy it obviously fills in when printed. Last issue was better but had the opposite problem of some characters fading out. The trick is going to be to be how to find out just exactly how much a ribbon needs to be used to get the perfect balance! Ed.]

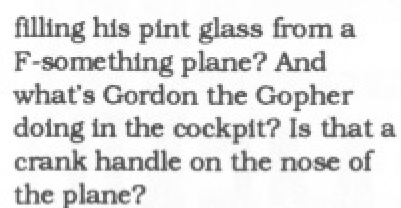
James concludes, "Is Bill Halsall still with us? Come on Bill, write us some more crackers! 'Crooked House' is the best one you've written so far, go for the impossible and make the best even better! (Or it was until I formatted the disk ... Ooops!) But does he really have to present his listings in hexadecimal gobbledegook? Does he love watching others fret over his listings? Does he know how many people he must have put in asylums?"

WHO ARE THOSE PEOPLE?

If you think Jason Kendall's letter about naming his Fantasy Football team after an 8-bit game character was a bit off the wall, what do you make of this note from Avram Dumitrescu of Belfast?

"Over the years PAGE 6 magazine has had some great covers, though recently I've started losing sleep and hair over a number of the more interesting pictures. Can you help me retain a regular routine please (even episodes of 'Space Precinct' and 'Babylon 5' don't send me a-slumbering!)? Who are the people on the following PAGE 6 covers? Issue 28 - the Biggles character. Issue 29 - the Snow White fan. Issue 34 - the witch and wizard (lovely caves). Issue 35 - the three Cluedo people?

Are those hands on Issue 44's cover human or plastic? On Issue 40 why is that man



filling his pint glass from a F-something plane? And what's Gordon the Gopher doing in the cockpit? Is that a crank handle on the nose of the plane?

Thanks for reading this letter. Perhaps someone could even squeeze an article out of this subject - it would make a change from DLI's and VBI's ...!"

[Allan seemed to think this one a bit strange from his comments, (edited out for the sake of keeping Avram as a subscriber!) but I thought it was quite interesting, at the very least a pleasant diversion. Let's start with Biggles. I have no idea who he is but he sure did not expect to appear on the front of a computer magazine as part of his Degree course in Photography! The photographs on most of our covers were taken by a professional photographer friend who lectures at Stafford University. Whenever we needed a model or two he would just grab a suitable looking student and trundle them along to our office! We borrowed or hired the costumes and, hey presto, a suitable cover. Another student (who had probably never even seen a 130XE before!) appeared as the 'Snow White Fan' on Issue 29. On Issue 34 the wizard was again an unknown student but the witch was a girl called Jackie who was working for us at the time. The 'cave' was, in fact the basement of our office but white office walls didn't look too impressive so the shot was married together with a separate shot of some impressive stalactites which we bought (more expensive than the studio shot!). On the next issue the maid is Stacey who worked for us for some time and who will be well known to those of you who read the strange comments which appeared on page 4 of most issues. The other two people were students on another of those strange 'field trips'.

Finally those hands on Issue 44 are none other than my own, carefully painted in bright green poster paint from the Early Learning Centre! You see, Allan, some of the letters are not half as crazy as some of the things I have done over the years!

As regards Avram's comments on the F-16 on Issue 40 I think Allan may well be right after all and maybe Avram does need to switch his machine off once in a while! Ed.]

So, that's it for another issue. Surprisingly, when I sat down to try and meet the deadline for this column, I found that Mailbag seemed to write itself this time around. Thank you to all the correspondents for helping make this so.

As I seem to be ahead of schedule, what else can I find to ramble on about ...? I was disappointed that the anticipated review of PC XFormer didn't make it into the last issue; I hope to see it in issue 73. If not, I may end up writing one myself as following the recent acquisition of a 486DX4 multimedia PC, I have already tried the PD demo of PC XFormer and am in the process of purchasing the commercial version. Perhaps the next Mailbag column will be compiled using PaperClip as usual but running on a PC that's emulating the Classic Atari! Stranger things have happened ...



Air your views on all things Atari or help your fellow users with their queries - even ask for help yourself. It's all interesting, if only you write it down. Here's the address:

MAILBAG
NEW ATARI USER
P.O. BOX 54, STAFFORD
ST16 1TB



PROGRAMMING

HIGHLIGHTER MENU

A nice joystick-driven menu is sometimes the best way to communicate with the user and a subroutine which you can use to drive such a menu would be very useful. Here I present such a menu routine, called the "Highlighter Menu", which you might find just the ticket in some of your own applications.

Joel Goodwin presents a superb menu selector routine to use in your own programs

WHAT THE SUBROUTINE DOES

The user will be presented with several options in graphics 0 text, listed vertically. By moving the joystick up and down, the user can highlight the option he wishes to select. The trigger will confirm this choice.

HOW TO USE THE SUBROUTINE

Include the subroutine in your program. It uses a piece of machine code and so must be initialised; your program must issue a 'GOSUB 9500' early on.

Whenever you wish to use a highlighter menu in your program you must first print the menu and all of its options on to the screen. I stress that the subroutine only drives the menu and does not draw it for you; this is to allow you to design the menu exactly how you wish. Once the menu has been drawn, your program is now ready to access the subroutine.

It should do this by setting four variables MX, MY, MLEN and MNUM, then carrying out a 'GOSUB MENU' command.

MX and MY are the X,Y coordinates of the first character of the topmost option in your menu. MLEN is the width of the menu and MNUM is the number of options in your menu (maximum 24). After the subroutine is finished the variable OPT contains the number of the option selected by the user, between 1 and MNUM inclusive.

OTHER STUFF

There are three other variables which may be of use. KEEP can be set to 0 or 1. If KEEP is set to 1 then once an option is selected by the user it will remain highlighted after the trigger is pressed. As you might guess, if KEEP is 0 then the option will not stay highlighted.

The highlighter subroutine can make a sound when the user moves the joystick up and down; you can put the line number of a sound subroutine into the variable SND. The subroutine must finish with a 'RETURN' statement and can use the variable OPT (the number of the option currently highlighted) so that the sound can vary as the user moves up and down the menu. The sound subroutine must not change any of the menu subroutine variables, including OPT. Similarly, SND2 is the line number of a sound subroutine which is called when the trigger is pressed.

Do not use memory locations 203-204 to store anything permanently because each time the menu subroutine is called it will trash anything in these locations.


```
AA 8985 REM  HIGHLIGHTER  Menu Routine
OQ 8986 REM  Joel Goodwin  -  May 1995
KV 8987 REM
XE 8988 REM This expects the variables:
WY 8989 REM MX,MY - position of menu
FC 8990 REM MLEN - length of each option
ZH 8991 REM MNUM - number of options
MU 8992 REM It will return with:
WQ 8993 REM OPT - option selected 1,2,..
UK 8994 REM Other variables:
HW 8995 REM SND - lineno of move sound
GJ 8996 REM SND2 - lineno of trig sound
VC 8997 REM KEEP - keep selected option
ZV 8998 REM .       highlighted if <>0
VW 8999 REM
DT 9000 OPT=1:HLI=USR(HL,MX,MY,MLEN)
VT 9010 IF  NOT STRIG(0) THEN 9100
NR 9020 HLS=STICK(0):IF HLS<>13 AND HLS<>
   14 THEN 9010
TX 9030 HLI=USR(HL,MX,MY+OPT-1,MLEN)
BF 9040 IF HLS=14 THEN OPT=OPT-1:IF  NOT
   OPT THEN OPT=MNUM
JJ 9050 IF HLS=13 THEN OPT=OPT+1:IF OPT=M
   NUM+1 THEN OPT=1
UG 9060 HLI=USR(HL,MX,MY+OPT-1,MLEN)
MW 9070 GOSUB SND:GOTO 9010
MJ 9100 GOSUB SND2:IF  NOT KEEP THEN HLI=
   USR(HL,MX,MY+OPT-1,MLEN)
AM 9110 RETURN
MX 9499 REM  INITIALISE HL$
SL 9500 DIM HL$(77):RESTORE 9500
FJ 9510 FOR HLI=1 TO 77:READ HL
ER 9520 HL$(HLI)=CHR$(HL)
DC 9530 NEXT HLI:HL=ADR(HL$)
AO 9540 SND=9450:SND2=9460:KEEP=0:MENU=90
   00
BG 9550 RETURN
CH 9559 REM  HL$ DATA
BY 9560 DATA 104,104,104,133,203,170,104,
   104,10,10,10,72,133,203,169,0,133,204,
   6,203
EA 9570 DATA 38,204,6,203,38,204,24,104,1
   01,203,133,203,169,0,101,204,133,204,2
   4,130
PB 9580 DATA 101,203,133,203,169,0,101,20
   4,133,204,24,165,88,101,203,133,203,16
   5,89,101
KH 9590 DATA 204,133,204,104,104,168,136,
   177,203,73,128,145,203,136,16,247,96
```

OH AND LASTLY!

I have also included a demonstration program which should give you a good idea of what the highlighter menu is capable of. Apart from that there is nothing else to add except that I hope you think the Highlighter Menu can add an extra something to your programs!

Demo program overleaf 

```
KK 10 REM ##############################
VT 20 REM #   HIGHLIGHTER MENU DEMO    #
YY 30 REM #       by Joel Goodwin      #
IZ 40 REM # -------------------------- #
GP 50 REM # NEW ATARI USER  AUGUST 95 #
KQ 70 REM ##############################
BO 75 REM
UX 100 GRAPHICS 0:POKE 752,1:? :COLB=0:CO
   LF=178:DIM N$(15),C(6)
PZ 105 C(1)=0:C(2)=18:C(3)=50:C(4)=66:C(5
   )=146:C(6)=178
UI 110 GOSUB 9500:REM Initialise HL
QV 120 SND=500:SND2=550:BOX=1000:KEEP=1
AN 130 POKE 710,COLF:POKE 712,COLB:? "}":
   X0=2:Y0=4:X1=37:Y1=6:GOSUB BOX
MP 140 POSITION 3,5:? "HIGHLIGHTER MENU D
   EMO - J. GOODWIN"
PI 150 X0=7:X1=32:Y0=12:Y1=19:GOSUB BOX
YG 160 POSITION 10,13:? "Change Border Co
   lour"
TV 170 POSITION 8,14:? "Change Foreground
    Colour"
UZ 180 POSITION 10,15:? "Change Up/Down S
   ound"
FQ 190 POSITION 10,16:? "Change Trigger S
   ound"
YJ 200 POSITION 15,17:? "A Big Menu"
HG 205 POSITION 11,18:? "Quit this progra
   m!"
VL 210 MX=8:MY=13:MNUM=6:MLEN=24:GOSUB ME
   NU
CL 220 ON OPT GOSUB 250,250,350,400,440,4
   50
MU 230 GOTO 130
EL 249 REM  CHANGE COLOUR 
PM 250 COL=OPT:AX=24:AY=8
GC 260 X0=AX:X1=AX+11:Y0=AY:Y1=AY+7:GOSUB
    BOX
XH 270 RESTORE 280:MNUM=6:MLEN=8:GOSUB 12
   00
TT 280 DATA Black,Brown,Red,Purple,Blue,G
   reen
ML 300 IF COL=1 THEN COLB=C(OPT)
QJ 310 IF COL=2 THEN COLF=C(OPT)
ZD 320 RETURN
IR 350 AX=3:AY=10
GH 360 X0=AX:X1=AX+13:Y0=AY:Y1=AY+6:GOSUB
    BOX
SH 370 RESTORE 380:MNUM=5:MLEN=10:GOSUB 1
   200
HN 380 DATA Standard,Mild 1,Mild 2,Dull,G
   ulp
QG 390 SND=490+OPT*10:RETURN
OP 400 AX=25:AY=10
DZ 405 X0=AX:X1=AX+13:Y0=AY:Y1=AY+4:GOSUB
    BOX
YJ 410 RESTORE 420:MLEN=10:MNUM=3:GOSUB 1
   200
AB 420 DATA Standard,Electric,Door
WX 430 SND2=540+OPT*10:RETURN
BL 439 REM  BIG MENU 
NZ 440 AX=15:AY=3
PK 443 X0=AX:X1=AX+20:Y0=AY:Y1=AY+15:GOSU
   B BOX
BH 446 RESTORE 600:MNUM=14:MLEN=17:GOSUB
   1200:RETURN
SP 449 REM  QUIT 
KO 450 AX=9:AY=10
JK 455 X0=AX-2:X1=AX+23:Y0=AY:Y1=AY+9:GOS
   UB BOX
HE 460 POSITION AX,AY+2:? "▟ QUIT: Are y
   ou sure?"
JT 462 POSITION AX,AY+3:? "█":POSITION A
   X,AY+4:? "█"
MO 463 POSITION AX,AY+5:? "|":POSITION A
   X,AY+7:? "█"
VO 465 X0=AX+6:X1=AX+16:Y0=AY+4:Y1=AY+7:G
   OSUB BOX
OM 470 POSITION AX+10,AY+5:? "NO":POSITIO
   N AX+10,AY+6:? "YES"
DE 480 MX=AX+7:MY=AY+5:MLEN=9:MNUM=2:GOSU
   B MENU
YP 485 IF OPT=1 THEN RETURN
```



```
LB 490 GRAPHICS 0:END
ZI 499 REM  SOUNDS 
QT 500 FOR B=15 TO 0 STEP -1:SOUND 0,OPT,
   2,B:NEXT B:RETURN
XS 510 FOR D=1 TO 2:FOR B=15 TO 0 STEP -5
   :SOUND 0,OPT*5,10,B:NEXT B:NEXT D:RETU
   RN
XA 520 FOR B=15 TO -15 STEP -5:SOUND 0,OP
   T*2,10,15-ABS(B):NEXT B:RETURN
BZ 530 FOR B=15 TO 0 STEP -5:SOUND 0,200+
   OPT*2,10,B:SOUND 1,201+OPT*2,10,B:POKE
    53768,1:NEXT B:RETURN
FZ 540 FOR B=0 TO 50 STEP 10:SOUND 0,B+OP
   T*10,10,15:NEXT B:SOUND 0,0,0,0:RETURN
OE 550 FOR B=15 TO 0 STEP -1:SOUND 0,20,1
   2,B:NEXT B:RETURN
KX 560 FOR D=0 TO 2:FOR B=15 TO 0 STEP -3
   :SOUND 0,8,12,B:POKE 53768,7:NEXT B:NE
   XT D:RETURN
HX 570 FOR D=0 TO 2:FOR B=15 TO 0 STEP -5
   :SOUND 0,8,8,B:SOUND 1,15,8,B:NEXT B:N
   EXT D:RETURN
PS 599 REM  BIG MENU DATA 
RO 600 DATA This is a very,large menu,who
   se options,do absolutely,nothing.,,***
   ***********
TZ 610 DATA *              *,*     ███
    *,*    ███     *,*    ▟██▙     *,*
   ▛█▜ *
TA 620 DATA *              *,************
   **
RP 999 REM  DRAW A BOX 
GY 1000 COLOR 137:PLOT X0,Y0
OT 1010 COLOR 149:PLOT X0+1,Y0:DRAWTO X1-
   1,Y0
GJ 1020 COLOR 143:PLOT X1,Y0
OI 1030 COLOR 25:PLOT X0,Y0+1:DRAWTO X0,Y
   1-1
JL 1040 COLOR 139:PLOT X0,Y1
WB 1045 COLOR 21:PLOT X0+1,Y1:DRAWTO X1-1
   ,Y1
GB 1050 COLOR 140:PLOT X1,Y1
JG 1055 COLOR 153:PLOT X1,Y0+1:DRAWTO X1,
   Y1-1
XR 1059 REM Draw "shadow"
HX 1060 COLOR 153:PLOT X0-1,Y0+1:DRAWTO X
   0-1,Y1
MZ 1070 COLOR 11:PLOT X0-1,Y1+1
MM 1080 COLOR 149:PLOT X0,Y1+1:DRAWTO X1-
   1,Y1+1
JE 1089 REM Empty box
DW 1090 COLOR 32:FOR I=Y0+1 TO Y1-1
WD 1100 PLOT X0+1,I:DRAWTO X1-1,I:NEXT I
PO 1110 PUT #6,32:RETURN
YI 1199 REM  DRAW MENU SUBROUTINE 
MD 1200 FOR I=1 TO MNUM:READ N$:POSITION
    AX+3,AY+I:? N$:NEXT I
AD 1210 MX=AX+2:MY=AY+1:GOSUB MENU:RETURN
AA 8985 REM  HIGHLIGHTER  Menu Routine 
OQ 8986 REM  Joel Goodwin  -  May 1995 
KV 8987 REM
XE 8988 REM This expects the variables:
WY 8989 REM MX,MY - position of menu
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UK 8994 REM Other variables:
HW 8995 REM SND - lineno of move sound
GJ 8996 REM SND2 - lineno of trig sound
VC 8997 REM KEEP - keep selected option
ZV 8998 REM .      highlighted if <>0
VW 8999 REM
DT 9000 OPT=1:HLI=USR(HL,MX,MY,MLEN)
VT 9010 IF  NOT STRIG(0) THEN 9100
NR 9020 HLS=STICK(0):IF HLS<>13 AND HLS<>
   14 THEN 9010
TX 9030 HLI=USR(HL,MX,MY+OPT-1,MLEN)
BF 9040 IF HLS=14 THEN OPT=OPT-1:IF  NOT
   OPT THEN OPT=MNUM
JJ 9050 IF HLS=13 THEN OPT=OPT+1:IF OPT=M
   NUM+1 THEN OPT=1
```

HIGHLIGHTER DEMO continued

```
UG 9060 HLI=USR(HL,MX,MY+OPT-1,MLEN)
MW 9070 GOSUB SND:GOTO 9010
MJ 9100 GOSUB SND2:IF  NOT KEEP THEN HLI=
   USR(HL,MX,MY+OPT-1,MLEN)
AM 9110 RETURN
NX 9499 REM  INITIALISE HL$
SL 9500 DIM HL$(77):RESTORE 9500
FJ 9510 FOR HLI=1 TO 77:READ HL
ER 9520 HL$(HLI)=CHR$(HL)
DC 9530 NEXT HLI:HL=ADR(HL$)
AO 9540 SND=9450:SND2=9460:KEEP=0:MENU=90
   00
BG 9550 RETURN
CH 9559 REM  HL$ DATA
BY 9560 DATA 104,104,104,133,203,170,104,
   104,10,10,10,72,133,203,169,0,133,204,
   6,203
EA 9570 DATA 38,204,6,203,38,204,24,104,1
   01,203,133,203,169,0,101,204,133,204,2
   4,138
PB 9580 DATA 101,203,133,203,169,0,101,20
   4,133,204,24,165,88,101,203,133,203,16
   5,89,101
KH 9590 DATA 204,133,204,104,104,168,136,
   177,203,73,128,145,203,136,16,247,96
```


DISK BONUS

MacPHEE'S FORTUNE

by Linda Naysmith

A classic adventure set in Scotland

You are a young person who has inherited a title and large estate somewhere in Scotland. Unfortunately your uncle, the late Lord MacPhee, was an alcoholic and compulsive gambler and, worse, had wantonly squandered the entire MacPhee fortunes which were rumoured to have been immense.

There are some things left but your inheritance comprises mainly of your uncle's horrendous debts which must be cleared off by selling the remaining MacPhee possessions at auction. You travel to the estate early one summer's morning for two reasons. To be present at the auction due to start that day and to have a last long nostalgic look around before you loose it all. Say farewell to the servants, if there are any left, and maybe dream of the secret fortune that tales tell was hidden by your grandfather in an attempt to protect it from his son's excesses.

Maybe there is some truth in the tales old wives tell? No harm in looking. If there is indeed a fortune you have only a limited time to discover it before the auction begins.

THE ULTIMATE BACKDROP DESIGNER

by Brian Kennerley

A machine code utility to help you design your own games

Here's a great utility for programmers. The Ultimate Backdrop Designer allows you to design multi-colour character sets and draw backdrops of any size and shape. If you can add a few Player Missile Graphics you might have the basis of a great game which can be featured in a future issue.

This program is fully documented on the disk with an excellent file reader which you can use on your own disks as a very professional way of reading text files. Virtually an extra bonus in its own right!

PLUS ...

EXTRA BONUS PROGRAMS ON THIS ISSUE'S DISK!

These great programs are available ***only*** on the ***NEW* ATARI USER ISSUE 72 DISK** which also contains all of the programs featured in this issue, ready to run. Disk subscribers receive their copy automatically but the disk is available separately for just £2.95 from PAGE 6, P.O. BOX 54, STAFFORD, ST16 1TB. Order by telephone if you wish on 01785 41153 using your Access or Visa card.

8-Bits in a PC WORLD

It won't be long before there is nothing but PCs and games consoles. Paul Rixon investigates whether your Atari can survive in this new world

The PC is firmly established as the popular standard for personal computing in the nineties. For years, business users pioneered the PC's evolution while home computing enthusiasts were occupied by a plethora of differing hardware standards. The majority of these proprietary formats couldn't sustain support in the longer term and PCs now dominate both the business and home user markets.

So what? Well, if you don't already use a PC then it's highly likely that sooner or later you'll end up with one sitting on your desk - at home, at work or at college. You will then have at your fingertips an extremely handy gizmo that can be used, among many other things, to expand upon the capabilities of your 8-bit Atari!

GETTING CONNECTED

If you have access to a PC and an Atari, you've no doubt considered the possibility of transferring data between these two machines. There are several ways to approach this: For those who have use of an Atari ST the problem is quickly solved by Page 6's '**Tari-Talk**' cable - since ST disks can be read by a PC (or can be easily modified to allow it) an indirect transfer route is achieved.

Transfers can be carried out with the help of a modem, by downloading files from one machine to the file holding area on a bulletin board or on-line service, then uploading them back to the other. With two modems, you can obviously have the machines connected directly across your computer desk. A cheaper method is to use a 'null modem' cable which lets the machines think they are communicating by modem, whilst they're really talking direct to each other.

If you're handy with a soldering iron it's useful to know that construction details of a dedicated data transfer cable - known as **SIO2PC** - are available from various shareware sources. The cable has been developed by US Atari enthusiast (also full time electrical engineer) Nick Kennedy. He provides you with circuit diagrams, a parts list and adequate instructions - all YOU have to do is acquire the components from a well-stocked electronics store and fit them together! Apparently it's also possible to build a cable that connects an Atari disk drive to your PC, allowing data to be accessed without need for an Atari computer. However, I've yet to uncover full details of this one.

G.M. TRANSFER CABLE

Fortunately, there's a straightforward option for those people (me included) who would prefer to 'plug and play' a ready-manufactured product. Micro-Discount have recently launched a new accessory called the G.M. Transfer Cable. This performs a similar function to the SIO2PC cable and is fully compatible with the associated SIO2PC utility program. Indeed, the latest version is supplied on 3.5" floppy as part of the package.

The cable measures just under a metre in length. One end is endowed with a 13-pin Serial Input/Output (SIO) connector of the sort that's used with all Atari peripherals, while the other end has a 25-pin RS232 serial connector, for plugging into a 'COM' port on your PC. A small gripe here is that modern PCs have 9-pin serial ports so it's more than likely you'll need to invest in a serial converter plug. These cost about a fiver from suppliers such as Tandy and Maplin. To be fair, the larger connector used by the G.M. Cable is utilised to house several electronic components which unobtrusively 'do the business'. The cable's generally compact design substantiates the absence of a 'thru' port - it will have to be the last device in your Atari's peripheral daisy chain.

USING SIO2PC

Once the cable is plugged in, all you need do is run the SIO2PC utility on your PC. The ingenious program creates up to four virtual 'disks' in the PC's memory, then convinces your 8-bit Atari they are genuine! This means you are able to boot the Atari from a virtual disk on the PC, or execute DOS operations using real and virtual drives.

After loading the utility you're prompted to enter the serial port number you intend to use. If all is well, the main options are then presented. The menu lists sixteen functions, though relatively few of these are needed during normal use. 'Create Disk' reserves memory for a virtual drive. You must specify whether single or double density is required, and also the disk size measured in tracks and sectors. Various pre-defined sizes are shown, or you can enter a custom format. For a standard DOS 2.5 enhanced density disk, you need 1040 sectors (see John Foskett's article in NAU issue 72 for more info on tracks and sectors). Select a drive number from 1 to 8 and hey presto! - your Atari thinks you've got another drive connected.

The next thing to do is format the new 'disk', using DOS on your Atari. You can either boot your usual DOS disk from a real drive, or use Atari DOS 2.5 or MyDOS loaded from a virtual disk - since these two are thoughtfully provided. Select the Format command in DOS

and specify the drive number for the virtual disk. Once formatted, the virtual disk operates in exactly the same way as any other.

COPY, COPY

If your disk duplicating software supports the use of multiple drives, shifting entire disks to (or from) PC is a breeze. With a real disk as drive 1 and a virtual one as drive 2, the copy is performed in a single operation. If you want to do it the other way round, you can alter the drive selector on your Atari drive to 2 and set the virtual disk to 1 - or any other valid drive numbers. Even if your software insists on controlling a single device, there's a simple technique to overcome the restriction. SIO2PC lets you change the drive number of a virtual disk at any time without affecting its contents. This means you can wait for the copier to finish reading the contents of a source disk in the real drive, then switch off the drive's power and set up a ready prepared virtual disk as drive 1. When it comes to perform the 'write' your Atari can't find the real drive so it uses the virtual one instead. Then, when it's time to read the source disk again you can power up the real drive and switch the virtual one out of use.

Virtual disks are initially stored in the memory of the PC though if this is insufficient to accommodate the size of disk you have in mind, you can specify direct file access instead. For storage purposes, you can also write the contents of memory to a physical file on the PC's hard disk. You can give each file any name you like, but the normal extension for a disk image is 'ATR'. ATR images can be loaded from disk into memory as and when required. With this facility, it's possible to store almost all your Atari disks (protected disks are the only exception, at present) on PC and then load them selectively to boot your cable-connected Atari. An enhanced density disk occupies about 130K - this means you could store ten Atari disks on one 3.5" high density floppy. With, say, 100Mb to spare on the PC's hard disk you could squeeze in more than 750 Atari disks. In theory, it's possible to manufacture a standard compact disc containing over 1000 Atari floppies!

One last function deserving a mention is 'Print Thru'. When this is set to standby, any printing initiated by your Atari is re-directed to the PC. The only problem is finding Atari software that's compatible with the PC's printer - Epson users have no worries, of course, but HP Laserjets are less commonly supported.

THERE'S MORE

Apart from SIO2PC, there are a few additional utilities contained in the G.M. Cable package. MAKADISK takes a PC file and converts it to an ATR disk image. This can be useful if you've downloaded Atari files from a bulletin board, though SIO2PC can handle this scenario anyway. TT, or Text Translator, converts text files between various formats. The function most relevant here is its ability to change the Atari's 'ATASCII' Carriage Return and Tab characters into standard ASCII text, or vice versa. FILE2PC runs from the Atari and sends SIO2PC into file transfer mode - it's handy if you want to port the odd file over. REMOTE also runs at the Atari end and basically sends commands to SIO2PC as if you were typing them on the PC's keyboard. This effectively turns the PC into a true 'server,' so there's no need for easy accessibility - or even a monitor (well, that's the theory!).

IN THE DOC

If, having read this far, you're totally confused about SIO2PC's capabilities then don't worry - the disk contains a generous supply of documentation files to explain how everything works. There is everything here from a quick summary of program functions to a

history of version changes and technical information on the software's internal methods.

The release notes mention problems that some users have experienced but I encountered no difficulty at all transferring data. My Atari system is not modified in any way, so it may be that some hardware upgrades cause small compatibility problems. The author has added various configuration options to assist in these cases. The only unwelcome 'feature' I found was that with the G.M. Cable connected to my PC, the Atari wouldn't recognise the 1050 drive until SIO2PC had been initialised. Unplugging the cable solved this one, but I'd prefer to keep everything connected.

At first sight SIO2PC seems rather daunting but this is mainly because it's an unfamiliar concept, and the documentation is unusually thorough. In reality, there are only a few functions that you will use regularly and the software carries out its main task reliably, without fuss. Just as it should do!

PC XFORMER

Having migrated your Atari disk collection to PC, it's understandable that you might want to run software without using an Atari computer. As you already guessed this is indeed possible with the aid of PC Xformer, a program distributed by the American company Branch Always Software. Branch Always specialise in emulation products and have exhibited at almost every North American Atari show since 1988. You may recall ST Xformer, an 8-bit Atari emulator for the ST, which I examined four years ago in PD World. More recently a version of PC Xformer has been released as Shareware and also published on a national PC magazine's cover disk. With version 3.0, Branch Always have addressed several drawbacks associated with earlier releases, added a printed user manual and launched the package commercially through an international network of authorised dealers.

For the techies: PC Xformer 3.0 is a 32-bit DOS-based PC program, though you can launch it from Windows if desired. It's claimed there are no problems running under the OS/2 2.1, OS/2 Warp, Windows 95 and Windows NT operating systems. You'll need at least a 386SX PC with VGA graphics - the better machine you have, the better performance can be expected. According to documented statistics, a 386DX/33 achieves about 100% of an Atari 130XE's speed whilst a Pentium runs seven times faster. However, my experience with a 486DX/33 indicates that some Atari programs are emulated more slowly than expected, others slightly faster. It usually depends on the amount of graphical activity. If you have a very fast graphics card in the PC, the speed of emulation may be significantly improved. Incidentally, PC Xformer has two speed settings: 'normal' tries to match the pace of a standard 130XE, so is most useful when running arcade games, while 'fast' cracks along as quickly as your PC allows.

NO INTEL INSIDE

Within PC Xformer are the operating system ROMs for Atari 800, 800XL and 130XE computers. It supports expanded memory of 256K in 130XE mode. As well as offering 6502 processor emulation, PC Xformer takes care of the ANTIC chip's text and graphics modes, including the 256 colour GTIA palette, and Player Missile Graphics with collision detection. Display List Interrupts, IRQs and NMI interrupts are included and, of course, Revision C Atari BASIC is present and, er, Ready.

Modems and printers can be used via the PCs serial and parallel ports, while a PC joystick can be used as an alternative to keypress joystick emulation. Four-channel POKEY sound is available to PCs equipped with any sound card meeting the Soundblaster specification. At present the sound is limited to pure voices only - distortions, such as those used for special effects and theme music in arcade games, can't be reproduced.

Key-clicks and other internal sounds such as BASIC's end-of-line bell are handled by the PC's internal speaker.

IT'S LOADED

Once loaded, PC Xformer defaults to 130XE mode with BASIC present - a familiar blue screen with READY prompt. Command-line flags can be used to start up with alternative settings - Atari 800 mode, BASIC disabled, no initial help screen, external joystick activated, modem connected and Sound Card present. The last three options are otherwise disabled to avoid conflict with PCs that don't have the respective devices, and to avoid wasting time performing unnecessary checks.

The Atari keyboard is mapped, where possible, onto the equivalent PC keys - so for example, Shift-7 gives an ampersand sign rather than Atari's inverted comma. This makes life simple for those who are used to typing on a PC keyboard. Unfortunately an American layout is assumed and the 'KEYB' setting of the PC's configuration is ignored. This means that a few characters - such as double quotes and the '@' sign - don't match up. I hope this problem will be sorted out soon! The Atari's unique 'console' keys are operated via function keys. The 'F' keys also provide an ability to toggle Atari BASIC on or off, change the emulation mode and exit from the system. Page Up and Page Down serve to scroll the display window, one pixel at a time. This can help if the screen appears to extend too far in one direction.

DOES IT WORK?

Enough theory! The proof of the pudding is of course how well PC Xformer copes with real-life Atari software. It supports four virtual drives using the ATR disk image format, so with the use of a suitable transfer cable you can port over software for experimentation. Build instructions for the SIO2PC cable are included, as are all the associated utility programs. Naturally I used the G.M. Cable!

Atari BASIC emulation appears to be quite successful. I tried a selection of the latest Public Domain disks from Page 6 and was quite pleased with the results. PC Xformer had difficulty coping with Page 6's title page and menu systems, but the underlying BASIC programs usually worked okay. For example, on **Disk #266 - Atari User Classics** five out of eight games were fine. Of those that didn't work, the problem was probably due to Player Missile Graphics - PC Xformer isn't too hot on these. Certain programs seem to start up in a never-ever cycle of collision detection, which immediately triggers a lost life in some games. The title screen for the **Issue 72** disk failed, but the programs themselves didn't pose a problem. The bonus Star Database on side B also booted without drama. On **Disk #253 - Collect and Blast** only two out of four games would operate. These were the ones that loaded with BASIC - the others were machine code only.

As for commercial software, it's a case of trial and error. I found that many programs worked in Atari 800 mode but, strangely, not in 800XL or 130XE modes - even though they would normally be considered compatible with these machines. Textual programs tended to have a higher success rate that those which involved advanced graphics. **Mini Office II** was a success story, as was **Graphics Art Department** - but **Atari Writer** couldn't be budged. **Shanghai** and **Battleships** were a no-no and **Boulderdash**, **Video Classics** and **Elektraglide** wouldn't run either. But **Tail of Beta Lyrae** was as playable as ever (nice music!) and **Lode Runner** functioned perfectly in its usual addictive manner. **EMI Pool**, **Oil's Well**, **Bomb Fusion**, **Miner 2049er** and **Jet Boot Jack** all worked - **Rescue On Fractalus** was okay too, though rather slow due to its intense graphics processing.

Of those games that didn't work most simply refused to start up at all. Some played the theme tune but progressed no further, others displayed a jumble of corrupted graphics. Again, PMGs and snazzy 'Rainbow' effects might be to blame. Collision detection in general didn't seem as reliable as it should be, making some shoot em' ups rather tricky! Some screens overlapped the visible area - the scroll feature helped here, but it was still rather inconvenient. Minor graphics corruption was quite common - but didn't usually spoil a game. Straightforward utility programs were less problematic. **Rob C** and **Multiboot** menus were fine, as was **Turbo Basic**. Of course, there are plenty more I haven't tried yet! If you get hold of the PC Xformer, why not let us know how you get on?

AN EXCELLENT USER GUIDE

PC Xformer's User's Manual is an excellent reference guide, even if you don't intend to use the software. The first few pages cover the specific functions of emulation but there are also discussions of MyDOS and Atari DOS 2.5 (both provided as disk images) and on transferring files between different machines. Appendices cover the ATASCII character set, device handlers, editor commands, error codes, graphics modes, colours, sounds, file extensions and sources of existing Atari 8-bit support. In fact, all the information that most Atari users refer to frequently is condensed into the handy A5 booklet. Over 13 pages of the manual's 36 are occupied by a glossary of terms, all of which you might hear mentioned in an Atari computing context. I've never seen such a comprehensive list in one place before.

PC Xformer still has a way to go before it can realistically claim to replace a genuine Atari computer, but it does try hard to impress. In any case, most users don't want to ditch their old machines - they will probably use PC Xformer to develop and test new software or to run a favourite utility. I had loads of fun experimenting with Atari emulation but I'll certainly be sticking with the real thing!

COMING SOON

Once you've registered a purchase of PC Xformer with Branch Always, they'll write to you with news of the latest developments. Cyberspace cadets can also gather information via CompuServe and the Internet. The company's newest product is Gemulator 4.0, an emulator which enables ST or STE software to be run, at full speed or faster, using Windows on a PC. It comprises a card that plugs into a spare ISA slot on your PC, and software that will run on any 486 or Pentium with at least 8Mb RAM. The UK price will probably be £119, but you have to buy TOS ROMs as well at an estimated £30. A notebook version - Gemulator For Laptops - is promised soon. For 8-bitters a new version of PC Xformer, designed to complement Windows 95, is due for release shortly. Come to think of it, so is Windows 95!

SUPPLIER INFO

PC Xformer 3.01 requires a 386, 486 or Pentium PC with at least 4Mb RAM. A Soundblaster compatible sound card, printer and joystick are useful extras. The review copy was kindly supplied by ***Micro-Discount (0121 353 5730)*** *who sell the package at £22 inclusive. For further details of this and other emulation products you can also write to* ***Branch Always Software at 14150 N.E. 20th Street, Suite 302, Bellevue WA 98007, USA.*** *Their Internet address is brasoft@halcyon.com and the CompuServe number is 73657, 2714.*

Construction details for the SIO2PC cable are provided with the PC Xformer 2.11 shareware disk, available from various PD sources. The ready-assembled G.M. Transfer Cable, complete with the latest SIO2PC software release, can be obtained from ***Micro-Discount*** *at £24.* ●

HEY! HEY! it's The TIPSTER

Time to awake from my slumber once again and see what tasty morsels there might be in the Tipster basket this time around. Lets see ... looks like there is something there, certainly enough for this issue thanks mainly to Kevin Calford's wonderful explorations of a certain dungeon, so I'll get them together for your delight. Remember though I'll need lots more tips for the next issue as the basket is now bare, so after you have read these little beauties, send me a few tips of your own. There must be loads more things you know about games that I don't.

A NEW FOURSOME

From bonnie Scotland, **Graeme Fenwick** has a neat foursome for you, one of which is just for fun and absolutely no use at all!

DEATH RACE Always stay on the left hand side of the road, only moving when a car comes along - you can build up ridiculously high scores this way

NUCLEAR NICK/MR. ROBOT You can use the SELECT key to skip levels. Also, in NN, pressing START as soon as the game is over gives you an extra life

SHAMUS Staying at the very edge of the screen means the nasties can't get you. This is really difficult and you can't avoid the Shadow this way

NEW YORK CITY Remain outside the city and wait until your gas runs out. Now go back the way you came and seen what happens. Silly isn't it?

DOWN IN THE DUNGEON

A million thanks to **Kevin Calford** from Swansea for a great expose on **ALTERNATE REALITY - THE DUNGEON** which has gone a long way to rescuing this issue's column. Let's get on with it ...

1 You can increase certain stats if you use the following procedure. Some items, e.g. an 'Ironwood Bokan' increase STR by 20 temporarily when used. It is possible to make this increase permanent.

A) Make sure you are using the item (check that your stats have increased)

B) Now go to the weapon enchantress and enchant the weapon (you will need crystals). Any form of enchanting will do. Now leave the establishment

C) Examine your inventory. You will see that you are no longer 'using' the weapon, but your STR has remained the same

D) You can do this as many times as you like but, unfortunately, only once per weapon, as you can't enchant an enchanted weapon.

This procedure will work on any magical weapon or armor. You may discard the weapons if you wish.

2 The answers to the Gargoyles riddles are:
1 - SHIPWRECK 2 - BLOODSTONE 3 - ORACLE

3 The Basilisk has the Bloodstone

4 Carrying a 'Sword of Demons' summons Flame Demons periodically.

5 Don't give anything valuable to the Clothes Horse. He will accept something else, e.g. leather jacket. Leave anything valuable outside his room and collect it again on your way out.

6 Fight the Basilisk with Bare Hand as primary weapon and Mirrored Shield as secondary weapon

7 Ghouls will accept dead corpses as gifts

8 If you get stuck with the Lodestone, get rid of it by going to the Oracle of Wisdom and throwing it into the flames or by offering it as a gift to a lifeform (there are some who will take it)

9 If you lose your P.A.C. Card or Mirrored Shield (essential to complete the game) don't worry, they will appear as treasure if you kill a Master Thief

TOO TOUGH?

If you found that level 25 of **THE CITADEL** was still too tough even with the password given last issue, it's probably because the password was wrong! The level 25 password is not TOUCH, it's **TOUGH**. Sorry about that (my eyesight is going from lack of tips) and thanks to Joel Goodwin for spotting it.

10 Some Gold Horns are booby-trapped. Instead of restoring your H.P. to max, they gate in Berzerkers and then disappear. You can't tell which ones are booby-trapped

11 You can sell small Dragon Corpses at the 'Der Rathskeller Bar and Grill' (I won't say how much)

12 Sell the 'Great Wyrm' corpse there also (if you can kill it - it has about 2,000 hit points) for even more

13 Take any other corpse there and you will be thrown out

14 A really good character can belong to all four 'good' Guilds, but a bad character can only belong to three of the four 'bad' Guilds. The Thieves will not accept you

15 Solution to the puzzle of the three doors is:

1st door - go through middle one
2nd door - the left door
3rd door - the left door again
4th door - middle door
5th door - middle door again

You will now find yourself in a large room with a winding passage leading from it. This will take you to Acrinimiral's tomb. This is where you should take your staff pieces

16 Wonderfully moral characters will be allowed access to the chapel sanctuary where you will be given a new weapon and taught a new spell (be good to find out what) and provided with free B&B

17 You can have more spells than the maximum the Guilds will allow, e.g. if a Guild says you can have only 8 spells, then learn the 8 permitted and you will still be able to learn the other spells available in the Dungeon, e.g. Tempral Fugue from the prisoner (giving a total of 9 spells)

18 The 'Golden Apple' will increase your H.P. by 15 then disappear from your inventory. Do the following to increase your H.P. considerably. As soon as you have picked up the Golden Apple, hit 'D' for drop item (you have to be VERY quick here). You will see the Golden Apple in your inventory. Now drop it. Your H.P. will have increased and the Golden Apple will still be there. You can do this indefinitely

19 The Boatman on the second level requires 5 coppers (no more, no less) to take you ACROSS the river (1st hour after midnight of course)

20 In the Hall of the Adept, there is a picture of a Purple Pyramid. Stand here and use the Amethyst Rod. You will be teleported to Level One 62 North 32 East in a corridor where you will find a Gauss Rifle and a Solar Suit

21 One of the Oracle's quests requires you to get the Half Rings from the Trolls and Goblins, take them to the Dwarven Smithy for reforging, then throw the reforged ring into the Oracle's flames. However you do not need to go to the Smithy to reforge the ring. Do the following - get one ring half (doesn't matter which) and take it to the others. After you have given up your ring half, walk back into the palace and demand the ring back. When you defeat the King of Tyrants you will find one reforged ring (why waste valuable gems or jewels at the Smithy?)

22 The maximum your stats can be is 255

23 The Gargoyle's name is .... (I don't know ..... help!)

Wow, what an astonishing load of help in The Dungeon, Kevin must spend most of his life in there! Despite all this there is still more to explore and perhaps you can help Kevin with the following.

HELP NEEDED

In **THE DUNGEON** Kevin recently came across a Glass Dagger which he got from an Archmage. This is the most effective weapon he has come across with Sharp - high, Evil - Very high and Cold - Very High but the problem is it keeps breaking (being made of glass, I suppose). Is it possible to use this weapon? Or is it just a red herring? Kevin has tried to enchant it but with no luck.

Can you help?

* * * * * * * *

RESCUE ME!

Here's a quick tip on **AIR RESCUE** from Dave Parrish of New Milton Hants. He'd only had the game for a week before he sent in this tip. If you find that you can't land close enough to a building to pick up survivors you can still fire your guns while on the ground thus destroying any obstacle on the screen. You must not be too close as the explosion will destroy your chopper. Just hold the joystick in the desired direction i.e. left or right and hold down the fire button.

SEND YOUR TIPS!

A great big bunch of thanks to all those who sent it their tips this issue. Next time it could be YOUR turn to get your name in the Tipster's Hall of Fame. You must know something about a game you have played. Write it down and send it to the following address

THE TIPSTER
NEW ATARI USER
P.O. BOX 54
STAFFORD
ST16 1DR

P.S. I'll love you to bits for everything you send in!

HIT THE JACKPOT!

John Foskett presents a random number selector that could help you win in the National Lottery

The Jackpot Calculator is a program which will select six different numbers at random between 1 and 49 for the National Lottery. When first run, a prompt is given to initialise a printer (if available) and to press START to begin after which the program sets the run number to 1 and displays a continuous count of random numbers in the centre of the screen with a marker in the first number position. After a few seconds, the invitation to press SELECT is given to enable the first number to be obtained and when pressed, the random count is stopped and the selected number is printed in the first position where the marker had been positioned. When released, the random count will re-start and the marker moved into the position of the second number in readiness for SELECT to be pressed once more. This is repeated until all six numbers have been selected and printed on screen, after which the selected numbers are sorted into numerical order and the invitation given to press OPTION to select another set. Upon pressing OPTION, the run number is updated and the screen cleared ready for selecting the next set of numbers. When the run number exceeds 99, it is reset back to 1 since more than 99 sets of numbers would rarely be needed.

If the SELECT key is pressed before the message to do so is displayed on screen, then the key will simply be ignored. Because SELECT must be released before the random count can re-start, it ensures that SELECT must be pressed to select each number. So if you believe that a great spiritual guidance is determining exactly how and when you press SELECT, then perhaps the sets numbers found aren't so random after all.

A PRINTER

After each set of numbers has been sorted into numerical order, they are output to a printer for permanent record. Although the program will try to access a nonexistent printer, it will function perfectly without error if a printer is not available. In this case, the sets of numbers will have to copied from the screen by hand.

On line 660 are three sets of printer control codes which will initialise the Roman font to give outline style characters of double width with shadow when using an Epson compatible printer. All other printing is achieved via the use of LPRINT so it should be a simple matter to adapt the listing to suit any printer.


```
QN 10 REM ┌───────────────────┐
MM 15 REM |THE NATIONAL LOTTERY|
XU 20 REM | JACKPOT CALCULATOR |
DT 25 REM |     Written by     |
JD 30 REM |John Foskett  Feb'95|
KY 35 REM ├───────────────────┤
OH 40 REM |   NEW ATARI USER   |
OP 45 REM |    AUGUST 1995     |
RF 50 REM └───────────────────┘
QT 70 GOSUB 520
UT 80 REM Initialise for Run
SH 90 NUMBER$="0102030405060708091011121314151617181920212223242526272829303132333435363738394041424344454647484910"
OZ 100 NUMBER=49:POSITION N0,N11:? #N6;S$:? #N6;S$:? #N6;S$:POSITION N0,N22:? #N6;S$
ML 110 REM Select Numbers
PU 120 SET=SET+N1:IF SET>99 THEN SET=N1
AO 130 IF SET<N10 THEN NUM$="0"
FU 140 NUM$(N1+(SET<N10))=STR$(SET)
GN 150 FOR I=N1 TO N2:NUM$(I,I)=CHR$(ASC(NUM$(I,I))+128):NEXT I
SZ 160 POSITION N11,N4:? #6;NUM$:FOR NUM=N0 TO N5:GOSUB 320:NEXT NUM:POSITION 9,N7:? #N6;"  "
CO 170 REM Sort and Reprint Numbers
HK 180 POSITION N1,N22:? #N6;"sorting into order":FOR I=N0 TO N4:FOR J=N0 TO N4
PZ 190 IF A(J)>A(J+N1) THEN NUM=A(J+N1):A(J+N1)=A(J):A(J)=NUM
AI 200 NEXT J:NEXT I:FREQ=60:FOR NUM=N0 TO N5:FOR I=N0 TO 50:NEXT I
IA 210 GOSUB 450:IF A(NUM)<N10 THEN ? #N6;"0";
LJ 220 ? #N6;A(NUM):GOSUB 470:NEXT NUM
ZL 230 REM Load SET$ and Print
PG 240 SET$(N6)=S$:SET$="RUN ":IF SET<N10 THEN SET$(N5)="0"
ZK 250 SET$(N5+(SET<N10))=STR$(SET):SET$(7)=": "
PA 260 FOR I=N0 TO N5:SET$(I*N3+9)=" ":IF A(I)<N10 THEN SET$(I*N3+N10)="0"
JN 270 SET$(I*N3+N10+(A(I)<N10))=STR$(A(I)):NEXT I:IF PR=1 THEN LPRINT SET$
MW 280 REM Press OPTION to Re-run
NN 290 POSITION N0,N22:? #N6;OP$
TG 300 ON PEEK(N53279)<>N3 GOTO 300:GOTO 90
MD 310 REM Select a Number
IX 320 POSITION N2,N22:? #N6;S$:COUNT=N0:GOSUB 450:? #N6;"  "
RE 330 RAND=(INT(RND(N0)*NUMBER)*N2)+N1:LAST=RAND:POSITION 9,N7:? #N6;NUMBER$(RAND,RAND+N1)
JU 340 IF COUNT=N30 THEN POSITION N4,N22:? #N6;"press select"
EW 350 IF PEEK(N53279)=N5 AND COUNT>N30 THEN 380
BM 360 COUNT=COUNT+N1:GOTO 330
YC 370 REM Print Selected Number
OQ 380 COUNT=N0:NUMBER=NUMBER-N1:GOSUB 450:NUM$=NUMBER$(RAND,RAND+N1):A(NUM)=VAL(NUM$)
GX 390 FOR I=N1 TO N2:NUM$(I,I)=CHR$(ASC(NUM$(I,I))+128):NEXT I
AZ 400 ? #N6;NUM$:POSITION N0,N22:? #N6;S$:FREQ=N30:GOSUB 470:NUMBER$(RAND)=NUMBER$(RAND+N2)
EA 410 IF COUNT=100 THEN POSITION N3,N22:? #N6;"release select":FREQ=200:GOSUB 470:GOSUB 470
HY 420 IF PEEK(N53279)<>7 THEN COUNT=COUNT+N1:GOTO 410
ZG 430 RETURN
LS 440 REM Position of Number
LY 450 POSITION N5+NUM*N4-(NUM>N2)*12,N11+(NUM>N2)*N4:RETURN
UM 460 REM Bell
FX 470 FOR I=15 TO N0 STEP -0.5:SOUND N0,FREQ,N10,I:NEXT I:RETURN
BI 480 REM Error Trap
```

continued

```
YT 490 IF PEEK(195)=138 THEN PR=0:GOTO 90
UM 495 FREQ=200:POSITION N5,N20:? #N6;"ER
   ROR: ";PEEK(195):? #N6:? #N6;OP$:GOSUB
    470:GOSUB 470
DG 500 ON PEEK(N53279)<>N3 GOTO 500:RUN
SZ 510 REM  Initialise
BW 520 GRAPHICS 17:POKE 16,64:POKE 53774,
   64:N1=1:N0=N1-N1:N2=N1+N1:N3=N2+N1:N4=
   N3+N1:N5=N4+N1:N6=N5+N1:N7=N6+N1:PR=1
UT 530 N10=N7+N3:N11=N10+N1:N20=N10+N10:N
   22=N20+N2:N30=N20+N10:N53279=53279
KG 540 POKE 559,N0:POKE 708,60:POKE 710,1
   38:POKE 711,74:SET=N0:TRAP 490
AO 550 DL=PEEK(560)+256*PEEK(561):POKE DL
   +N6,N7:POKE DL+12,N7:POKE DL+14,PEEK(D
   L+14)+128
ZU 560 DIM A(N5),DLI$(N30),NUMBER$(99),NU
   M$(N2),OP$(N20),S$(N20),SET$(26)
YY 570 DLI$="[illegible]
   he":S$=" ":S$(N20)=" ":S$(N2)=S$:OP$="
   press option to exit"
ES 580 POSITION N0,N0:? #N6;"the national
    lottery jackpot calculator":POSITION
   7,N4:? #6;"RUN:00"
GO 590 POSITION N1,N11:? #N6;"INITIALISE
   PRINTER":? #N6:? #N6;"   (IF AVAILABLE
   )":? #N6:? #N6;"AND THEN PRESS START"
QY 600 POKE 559,34
GY 610 IF PEEK(N53279)<>N6 THEN 610
WK 620 OPEN #N1,8,N0,"P:":RESTORE 660:FOR
    I=N0 TO 8:READ J:PUT #N1,J:NEXT I:CLO
   SE #N1
PO 630 IF PR=1 THEN LPRINT "   THE NATION
   AL LOTTERY":LPRINT "   JACKPOT CALCUL
   ATOR":LPRINT "-----------------------
   --"
VT 640 I=ADR(DLI$):H=INT(I/256):L=I-H*256
   :POKE 54286,N0:POKE 512,L:POKE 513,H:P
   OKE 54286,192:RETURN
TO 650 REM  Printer Control Codes Data
ZK 660 DATA 27,107,0,27,33,32,27,113,3
```

If necessary, all lines which reference the printer may be removed without harm to the overall program. These lines are lines 230 to 270 which are headed "Load SET$ and print", lines 620, 630, 650 and 660. "SET$" may also be removed from line 560 in the initialising subroutine.

HOW THE PROGRAM WORKS

The program works by loading a string (NUMBER$) with numbers from 1 to 49 inclusive in two-digit format. Random numbers from 1 to 49 inclusive are continually being generated each reading the number contained in the string and printing it on screen. Each time a number is selected, it is removed from the string to prevent duplication which shortens the string and the random numbers generated are reduced by 1 to accommodate the shorter string.

A dummy byte is used at the end of the string, an asterisk, because when the string is shortened to remove a number, the next number up is referenced in the calculations. The dummy byte allows the highest number (initially 49) to be removed from the string if selected. See line 90 in the listing.

The screen used is basically a mode 1 screen with two lines of mode two added for displaying part of the title and the random number count. A small DLI routine is used to increase the maximum number of colours used on screen to enhance the display. The DLI is also used to disable the attract mode and the CONTROL-1 stop-start toggle.

NOT YET!

I have used this program several times now, but as yet it hasn't found the jackpot. I'm sure it must be something to do with those two machines that look like tumble driers, after all, it can't be the Atari at fault can it?

Don't forget, if you do win the jackpot, I am your very best friend ....

The CLASSIC
PD ZONE

Lift off from Europa Spaceport was smooth. No hitches. However, I have this nagging feeling that something unexpected is about to spring itself upon me. Perhaps I'm just not used to returning to work after a rest period. Lack of rest periods can do that to you.

At the Spaceport I had some time to relay new software onto my portadat:

THE ART OF DOS

ARTDOS contains Mike Mitchell's alternative disk operating system RAINBOW DOS. This is basically an altered version of Atari DOS 2.5. A number of the standard options have been replaced with some interesting graphics and text handling facilities.

From the multi-coloured Rainbow DOS menu you can still get a disk directory (but with the advantage of a two-column display), go to BASIC, delete, rename, lock, unlock, format and binary load. All options are entered with a single key press. However, the other standard DOS options have been replaced with the following:

Read Text Files will display a text file on-screen. Use CONTROL-1 to pause the text.

Make AUTO.SYS will create an AUTORUN-.SYS file to run a BASIC program of your choice.

Load Koala File will load and display a Koala / AtariArtist picture file.

Looks Good is just the Rainbow DOS title screen.

Load Char Set and **Display Char Set** options are for loading and displaying fonts. By using CONTROL-C and CONTROL-D you can flip between the standard font and any other.

Load Micro Paint is for loading and displaying MicroPainter pictures.

Finally, there is a **Help Menu** which offers some hints on using Rainbow DOS.

If you enjoy computer art then Rainbow DOS will prove useful. The DUP.SYS file is quite large at 90 sectors but there is still plenty of space on the disk for your own pictures and fonts. Indeed, on the ARTDOS disk you'll also find 10 pictures and 20 fonts.

CLASSIC PD ZONE RATING: 73%

UTILITIES

THIS 'N' THAT is a collection of six utilities and three demos.

First up is *THE CREATOR*. This program is used to create the powerful Bellcom menu by David Castell, a 12-sector machine code file that can load both BASIC and machine code programs as well as display text files. The Creator allows you to customize the heading at the top of the screen. An excellent menu and with The Creator you can customize it too! *SUPERHOP* is the fractal graphics program from Antic magazine. It helps you to create fractals and features an impressive zoom mode which allows you to go 'inside' the fractal as it develops. An interesting experience. Next comes a program to test your joysticks and paddles. Joystick Tester (I suppose this title is more original than Joystick and Paddles Tester!) allows you to test the eight directions and button of your joystick. It also has the facility to test your paddles. An evaluator option is included which gives response time, error percentages, etc. for each controller. A handy way to identify all those broken joysticks you've collected over the years. You know, the ones that are breeding up in the loft and smothering the one or two which still work OK.

Calling all gardeners! *MY GARDEN* is a program which will help you plan your spring garden (a bit late for this year but I suppose gardeners are used to planning in advance). By entering the size of your garden and the types of vegetable you wish to grow, My Garden will give you the number of rows and plants required. It will also plot a graphic representation.

Other programs on This 'n' That are *THE XF551 DRIVE ENHANCER* (which claims to speed up the performance by 12% - I don't own an XF551 so cannot verify this), *KIDS-WORD: THE ELECTRONIC TYPEWRITER* (a simple word processor written in Turbo BASIC), and the three BASIC demos: *VISIONS*, *ATARI DISPLAY* and *DICE ROLLER*. Dice Roller will prove handy if you lose your monopoly dice.

Altogether, This 'n' That is an enjoyable stroll through the world of PD.

CLASSIC PD ZONE RATING: 76%

DIGI DEMO

The ***2 UNLIMITED DEMO*** is a large digitized sound demo which brings the pop-techno group 2 Unlimited onto your 130XE.

There is a long loading period as the samples are loaded into memory - always a good sign with digi demos as this usually means a long demo is coming up rather than just a sample or two. When the demo begins you are quickly disappointed by the poor sample quality. Gruff and gritty, the techno beats splutter from your speaker. They sound as if they were sampled by using a microphone stuck in front of an Amstrad music centre.

The 2 Unlimited Demo is simply a collection of poor quality samples which have been spliced together with double-sided sticky tape. It is a disjointed mess! *[It sounded quite good to me, but then I can't stand 2 Unlimited anyway! Ed.]*

CLASSIC PD ZONE RATING: 10%

COOL DEMO

Staying with demos, we now take a look at ***COOL EMOTION*** by Hard Software, the Hungarian team who brought us the excellent Veronika demo.

Cool Emotion is a 9-part megademo spread over two disk sides. It begins with some very poor graphics including jerky Graphics 0 scrollers on a black and white background. Just as you think you've come across another 2 Unlimited Demo you are informed "Don't [be] afraid, it was just a grim joke!". A digitized "1...2...3..." signals the true beginning of the demo and some top quality digitized / chip music blasts from your TV speaker quickly followed by colourful "HARD" logos and smooth scrolling messages featuring a futuristic font. The scroller goes on for while and if you read it to the end you'll have a laugh.

This first part of Cool Emotion shows exactly what's in store for the eight still to come. There is lots of humour injected into cultured

by Stuart Murray

programming.

Cool Emotion is bursting at the seams with spinning graphics, colourful plasmas, entertaining scrollers, special effects, pulsating equalizers and powerful digitized and chip music. Look out for the wonderful half-screen scroller in Part 4 (with the letters made up of pulsating coloured balls) and the amazing 70's style Oil-Plasma in Part 8!

Even at the end, the demo is fun to watch as an army of ants carry the final scrolling message on their backs - in step with the music!

Overall, Cool Emotion is the best demo on the Atari 8-bit... so far! It surpasses its predecessor Veronika and even The Top Megademo by WFMH. Can 8-bit demos get any better than this?

CLASSIC PD ZONE RATING: 95%

HOT GAME

Moving away from utilities and demos, it's time for a game. ***HOT WHEELS*** is a machine code racing game from Germany. It is a clone of that addictive-in-the-extreme Atari coin-op, Super Sprint (which was in itself a clone of good ol' Indy 500). Grand Prix Simulator by Codemasters is the Atari 8-bit equivalent.

The object of Hot Wheels is to race four laps around the track and beat your opponent to the finish line. You can either race against a friend or the computer. The entire track is displayed on a single screen and so the cars are very small. This gives the game an enjoyable cartoon-like appearance.

You accelerate your car by pressing the joystick button. This allows you to judge bends correctly and avoid on-track obstacles.

Many of the Super Sprint features are incorporated into Hot Wheels. There are on-track obstacles, opening and closing gates, short cuts, water pools, oil patches and power-ups which increase the top speed of your car.

There are six tracks on the disk and you can increase the speed of the game by selecting Level 2 at the menu.

Hot Wheel is not in the same league as the Super Sprint coin-op (none of the clones are!) or even Codemaster's Grand Prix Simulator but it is PD and is very enjoyable nevertheless. If more use had been made of the power-ups and a few more tracks included, Hot Wheels would have been very hot indeed! As it stands, this disk is definitely worth a few races and, like all versions of Super Sprint, it comes into its own in the 2-player mode! Just watch out for the screams of "GET OUT OF THE WAY!"

CLASSIC PD ZONE RATING: 74%

SEE-YA!

Make no mistake, I have every confidence in this shuttle and it's ability to react to unforeseen circumstances but this premonition is intense enough to warrant a degree of cautiousness.

We entered the Classic PD Zone yesterday and moved into the uncharted sector three hours ago. There is something in here which corrupts all scans and signals to such an extent that they are unrecognizable. For four hours you fly by eyes alone. The rumours of shuttles disappearing in this sector have never been confirmed. That would affect business.

A few minutes ago I thought I saw something...

The disks reviewed were:

DISK 256 - ARTDOS
DISK 255 - THIS 'N' THAT
DISK DS121 - 2 UNLIMITED DEMO
DISK DS114 - COOL EMOTION
DISK DS122 - HOT WHEELS

JUST ONE LINE

by Peter Kirton

Old hands might find this old hat but newer users might be surprised to learn that you can write a complete program in just one line of code. Of course, it is not easy to come up with something spectacular and most one-liners tend to be demos but Peter Kirton has managed to cram a game on just one line. It will take you only a few minutes to type, so give it a try.

The program is designed to test your reflexes with the joystick. An orange square moving down the screen must be manoeuvred to pass immediately to the left of two yellow squares. Type it in, save a copy, and type RUN. Then be quick, there's no going back! Your score will be printed at the end.

THE LISTING

```
1 GRAPHICS 3:COLOR 2:PLOT 9,9:PLOT 11,18
:FOR I=1 TO 20:S=STICK(0):COLOR 1:PLOT X
,Y:X=X+1*(S=7):Y=Y+(Y<19):LOCATE X+1,Y,C
:A=A+(C=2):P=1^1:NEXT I:? A
```

THE SCORES

2 = PERFECT   1 = SLOW   0 = ASLEEP

If you try and type the listing in as shown above you will have problems as it will exceed the logical 3-line length of Atari Basic program lines. It must be in abbreviated mode where it will fit comfortably into the 3-line maximum. The line in abbreviated mode is shown below. First type POKE 82,0 and press RETURN to give the full 40 column width to the screen, then type the listing exactly as follows.

```
1GR.3:C.2:PL.9,9:PL.11,18:F.I=1TO20:S=ST
ICK(0):C.1:PL.X,Y:X=X+1*(S=7):Y=Y+1*(Y<1
9):LOC.X+1,Y,C:A=A+(C=2):P=1^1:N.I:?A
```

So, you now have a game and a tiny tutorial on using abbreviations. And it was all squeezed onto just one line!

Can anyone else come up with a one line program for the next issue?



THE DISK COMPANION

John Foskett presents a great disk utility that may well prove invaluable to you

The Disk Companion is a utility program for repairing corrupted disks and was designed for use with DOS 2.5 and the 1050 disk drive. The program is written in Turbo basic and is to be compiled using the Turbo compiler which gives a working speed that is comparable with the DISKFIX.COM utility program on the DOS 2.5 master disk. The Disk Companion has more features than DISKFIX.COM and displays all relevant data on screen so that its progress can be followed. The program can of course be used in the uncompiled format but obviously with the disadvantage of slower speed.

DISK PROBLEMS?

No matter how careful a person is, there will always be times when things go wrong with a disk, such as when the sector count no longer adds up and some sectors appear to become lost. A program under development may write data to a disk but might not close the file properly afterwards which can lead to a directory full of open files. Unfortunately, DOS 2.5 is blind to these problems so that they may not be noticed until things go wrong.

Another inherent problem with DOS 2.5 that can cause confusion is that when copying a disk (using option J), only "used" sectors are copied which are indicated as such within the disk's VTOC table, all other sectors, those marked as "free for use" are not. This means that the data filled sectors of deleted files are not copied because these sectors have been returned for use and have been marked as such in the VTOC. Being that the disk's directory sectors are always marked within the VTOC as used, they are always copied in their entirety, deleted file names as well. Clearly this means that whenever a disk is copied (using option J of DOS 2.5), deleted file names in the directory are copied, but the respective data filled sectors of those files are not. How nice it would be to be able to clean up a disk's directory before passing it onto other Atarians.

It is possible to modify the boot sectors of a disk in order to load a virus program into the computer when booting. How nice it would be to be able to check the boot sectors of a disk and to be sure of a virus free environment.

Another problem that can easily occur is corruption of the sector link data, such that one sector's link data that should point to the next sector in sequence actually points to itself. This type of corruption appears to be caused by one sector copying the previous sectors link data which can result from pressing the BREAK key during a SAVE to disk operation. Pressing BREAK doesn't necessarily stop a disk write function as witnessed by the need to repeatedly press BREAK during a disk I/O function in order to interrupt it. But pressing BREAK during a disk write could result in error 139 (Device Nak) which is a fair indication that some form of data corruption has taken place. When the corrupted link data is read, that is, when a sector points to itself, the computer reads that same sector over and over again in an endless loop which shows itself with a never ending series of beeps when the file is being read. Once the computer has entered the loop, there is no way out, the remaining part of the file is inaccessible since the sector linking has been broken. It then follows that since the file cannot be read, it cannot be deleted in the normal way either.

In a similar way, the disk's VTOC table can become corrupted, also associated with error 139 caused by pressing BREAK whilst writing to at least two disks, one in single density and the other in enhanced density. In this way, a single density disk can appear to be enhanced (and viçe versa) due to the VTOC data being written to the wrong disk. This can be accompanied by a bogus file name appearing in the directory which normally consists of a row of hearts. It is impossible to delete such a file name in the normal way since the heart is an illegal file name character which results in error 165 (file name error) should this be attempted.

Human error is always a possibility, we have all accidentally deleted a wanted file.

UP AND RUNNING

Upon running **The Disk Companion**, the title screen is presented requiring the number of the disk drive for use to be entered. Upon either entering a "1" or a "2", the disk in the selected drive is read and its format density is displayed on screen and if the total sector count within the VTOC has become corrupted, then this is also shown on screen. If the disk in the selected drive is changed at any time, then this title screen must be re-entered to enable The Disk Companion to be set up for the new disk. A message to this effect is displayed on screen. After a disk has been read, RETURN must be pressed to continue or ESCAPE pressed to exit back to the start to allow the disk drive number to be re-entered.

THE MENU

When RETURN is pressed from the title screen, the menu below is displayed, each option of which is described independently below ....

1. Disk directory
2. Restore deleted file (and verify)
3. Verify disk
4. Clean directory
5. Clean disk (used sectors only)
6. Check boot sectors
7. Disk map
8. Write with/without verify

Along with the above menu, the option to press ***ESCAPE*** to exit back to the title screen is given.

When selecting any of the seven main options from the menu, with the exception of option 8, the choice to continue by pressing RETURN or to exit back to the menu by pressing ESCAPE is given.

1. *DISK DIRECTORY*

This option will list the directory of the disk in the selected drive, all 64 entries being listed regardless of whether they are used or not. Upon entering this option, the total number of sectors on the disk (707 or 1010) is displayed along with the total number of used sectors and free sectors. After the totals, the first directory sector (sector 361) is displayed, showing all eight entries together with the number of sectors used, the starting sector and the status of each file. The status of the files being marked as locked, unlocked, deleted, open, cleaned and unused. In the same way as DOS 2.5 uses triangular brackets to indicate files which use at least one "enhanced" density sector (that is a sector above 720), The Disk Companion uses a spot preceding the status of the files. Therefore, like DOS, the spot indicates files which are blind to DOS 2.0s. On the extreme left of the screen is a key number which is the address of the file within the directory on a scale of 1 to 64. The key number is the file number for use in the next section, option 2 below.

Each directory sector is displayed in sequence upon pressing RETURN whilst pressing ESCAPE will exit back to the menu. When any of the directory sectors are displayed (apart from the first), TAB is pressed to return to the first directory sector. When the eighth and last directory sector is displayed, pressing RETURN or TAB will return to the first directory sector or again ESCAPE will exit back to the menu.

2. *RESTORE DELETED FILE (AND VERIFY)*

When selected, this option will prompt for a file number to enable access to the chosen deleted file, this is the key number stated in option 1 above. At this point, the file number may be entered (only numerals may be used) or ESCAPE used to exit back to the menu. Only when a number has been entered can RETURN be pressed to enter it or DELETE BACK-SPACE pressed to clear it. Any number entered that is outside the allowable range (that is less than 1 or greater than 64) will be rejected.

After entering the file number, the name of the chosen deleted file is displayed on screen together with the total number of sectors in the file and the files starting sector. The status of the file is then checked and if it is "not" deleted, then an appropriate message is displayed along with the option to press ESCAPE to exit back to the menu. If the selected file is a deleted file, then the option to press RETURN to continue or ESCAPE to exit back to the menu is given. Upon pressing RETURN to continue, a full integrity check is performed on all the sectors of the selected file after which the finishing sector is displayed together with the total number of bytes in the file. At this stage, the option to restore the file by pressing RETURN or exiting by pressing ESCAPE is given.

Should the integrity check fail, then a message will be displayed informing that the selected deleted file is not retrievable and ESCAPE must be pressed at this point to exit back to the menu. This may be the case if the disk has been written to after the selected file was deleted. If any of the files sectors are found to be outside the range of a single density disk during the integrity check (that is sectors above 720), then the file status is altered accordingly to allow DOS to mark the file with the triangular brackets in the usual way. This also allows The Disk Companion to mark the file accordingly.

Upon pressing RETURN after a successful check, the file name in the directory is first restored after which the disk is fully verified in order to update the disk's VTOC table. When completed, ESCAPE must be pressed to exit back to the menu.

It is essential that RESET is not pressed during the verification of the disk since this would prevent the VTOC table from being updated. This would mean that although the deleted file is fully re-established in the directory, its sectors would not be protected from being overwritten in the VTOC. If this is the case, then the disk must be verified using option 3 below or by restoring another file, in which case the verification of that file will of course include all files.

Once a file has been restored, it is given the status of unlocked, which can be witnessed by using option 1 to view the disk's directory (or by using DOS). Once restored, a file is fully protected within the VTOC table and is safe from being overwritten.

3. *VERIFY DISK*

When using this option, the directory is searched to locate all files on the disk and every time a file is found, it is read and its sectors are recorded to enable a new VTOC table to be constructed. During verification, the current file and the current sector being read is displayed on screen along with the number of open files closed and the number of corrupted files deleted. After all files have been located and read, the newly constructed VTOC table is written to the disk after which ESCAPE is pressed to exit back to the menu.

At any time whilst the disk is being read, it is quite safe to exit back to the menu by pressing SELECT since the disk is not being written to at this time. Exiting by pressing SELECT is only enabled when the disk is being verified using "option 3" directly from the menu. If the disk is being verified in conjunction with option 2 to restore a deleted file, then exiting in this way is disabled because of the importance of re-establishing the disk's VTOC table in order to protect the restored file.

If corrupt sector link data is found in any file whilst being read, the file will be deleted and the disk verified for a second time to re-establish the disk's VTOC table to clear the corrupted files sectors. During the second verification, the option to exit by pressing SELECT is again disabled due to the importance of updating the disk's VTOC table.

4. *CLEAN DIRECTORY*

When entering this option, a cautionary warning is given stating that the use of this function will prevent the retrieval of all deleted files on the disk. Along with the warning is the option to exit back to the menu by pressing ESCAPE or to press CONTROL and INSERT together to begin cleaning the directory. The CONTROL/INSERT keys were deliberately chosen, being more or less at opposite ends of the keyboard to provide a definite two-handed operation in order to begin.

Only deleted file names can be cleaned (or zeroed) using this function, all others being bypassed. Once completed, ESCAPE is pressed to exit. The total number of deleted file names cleaned from the directory is displayed on screen. All cleaned file names are given the special status of "cleaned" as witnessed by viewing the disk's directory using option 1. See the section "The Cleaned Entries" for details.

It is not strictly true that using this option

prevents the retrieval of all deleted files. It does NOT erase the deleted files sectors, only the file name in the directory, therefore if the starting sector of a deleted file is known, then a file name can be reconstructed in the directory using a sector editor to point to it. In this way, a deleted file can be restored by using option 2 as described above.

5. *CLEAN DISK (DELETED SECTORS ONLY)*

This option is very similar to option 4 above with the exception that it cleans all previously used deleted sectors and returns them as blank unused sectors. When selecting this option, the same cautionary warning is given as in option 4 above where pressing ESCAPE exits back to the menu and again pressing CONTROL and INSERT together allows this option to begin.

Firstly this option initialises the VTOC bit map before cleaning begins which takes approximately 25 seconds in the uncompiled format, or just a few seconds when compiled. The bit map is reconstructed each time this option is selected to ensure the safety of the disk's data. Since this option actually erases data by overwriting the sectors, to initialise the VTOC bit map just once was deemed too risky considering the ease of human error.

Every sector on the disk is examined in sequence and if it is indicated as "free for use" in the VTOC table and has been previously used, then it is cleaned (or zeroed). If a sector is found to be currently used or a sector has never been used (or has been previously deleted), then it is bypassed.

Unlike option 4 above, this feature cleans the sectors of all deleted files and once the sectors have been cleaned, the data they contained is lost and their retrieval is then impossible. This option overwrites the data contained in these sectors so use with care and always ensure that a dubious disk is fully verified before the use of this option is considered.

Whilst disk cleaning is in operation, SELECT may be pressed to exit early after which ESCAPE must be pressed to exit back to the menu. Exiting early can save a lot of time when cleaning a disk which contains only a few deleted sectors, that is a disk where the majority of the sectors are unused. Once all the deleted sectors of a disk have been cleaned, the program will continue to load and check the remaining sectors in turn until every sector on the disk has been checked. In the case of a disk where the majority of the sectors are unused, there would be no point in continuing in order to check the remaining sectors because one would know that only unused sectors remain. The progress can be followed on screen and a suitable point for early exit (if necessary) can be estimated. The relevant data is displayed on screen in three categories, the number of used sectors bypassed, number of unused sectors bypassed and the number of deleted sectors cleaned.

6. *CHECK BOOT SECTORS*

Selecting this option will check the three boot sectors of a disk, the result of which is displayed on screen and if the check is passed, ESCAPE must be pressed to exit back to the menu. Should the check fail for any reason, then the option to write new boot data is given by pressing RETURN or again to exit back to the menu by pressing ESCAPE. If the option to write new boot data is taken by pressing RETURN, then the existing boot data on the disk will be overwritten after which ESCAPE is pressed as before to exit back to the menu. If this option is again selected, then the check will be seen to pass witnessing the newly written boot data.

It is important to note that The Disk Companion contains only the standard boot data, that is the data as it is written to a newly formatted disk when using the standard DOS 2.5 master disk. The program can therefore only check for the standard boot data, any other data, such as customised data will result in a failed check. The facility to check and if necessary to rewrite the boot sectors of a disk was included to ensure against virus programs and to go some way towards repairing a disk that fails to boot. In this interest, it was deemed only necessary to include the standard boot data.

7. *DISK MAP*

This option will list every sector on the disk in columns each preceded with an inverse uppercase character showing its current status as follows ....

- **N** - Not accessible
- **B** - Boot
- **D** - Directory
- **V** - VTOC
- **O** - Out of DOS range
- **F** - Free for use
- **U** - Used

The full disk map is displayed over several screens, each with the option to continue by pressing RETURN or to exit back to the menu by pressing ESCAPE. On the final screen, only the option to exit by pressing ESCAPE is given. Similarly to option 5, this option also initialises the VTOC bit map each time, see option 5 for details.

8. *WRITE WITH(OUT) VERIFY*

This option toggles the normal "write with verify" facility on and off, the current status being shown on screen. This is the only feature that does not have its own dedicated display screen.

THE CLEANED ENTRIES

This is a special non-standard feature which is a cross between a deleted file name entry in the directory and an unused entry. The advantage of a deleted entry is that it allows DOS to read the whole directory whereas an unused entry forces DOS to terminate. If a file name somewhere in the middle of a directory listing was deleted, then DOS would simply read past it. But if the deleted entry was blanked (or zeroed) using a sector editor, then DOS would read it as an unused entry and think the end of the directory has been reached and would then terminate.

Consider the following example of a directory listing ....

```
DOS SYS
DUP SYS
AUTORUN SYS
PROGRAM 1
PROGRAM 2
PROGRAM 3
PROGRAM 4
```

If "PROGRAM.2" was deleted, then the directory would appear thus in the usual way ....

```
DOS SYS
DUP SYS
AUTORUN SYS
PROGRAM 1
PROGRAM 3
PROGRAM 4
```

But if the deleted file "PROGRAM.2" was blanked using a sector editor, then the directory would appear thus ....

```
DOS SYS
DUP SYS
AUTORUN SYS
PROGRAM 1
```

Note that DOS terminates when it finds an unused entry (the blanked entry) and that the last two files are missing from the directory listing. This is the reason why a deleted file name cannot be cleaned by converting it into a blank unused entry.

The status value of a deleted file name entry is "128" and it was found by experiment that any value above 127 allows DOS to read past the entry whilst any value less than 128 forces DOS to terminate. Therefore the way to solve the problem was to use a value greater than 128 and the value 129 was chosen.

All that was necessary to clean the deleted file names from the directory was to use the non-standard value of 129 for the first (or status) byte and to blank out with zeroes the remaining fifteen bytes of each file name entry. In this way, a cleaned entry appears exactly the same as an unused entry in the directory, but acts as if it were a deleted entry. The non-standard status value of 129 acts exactly the same as a deleted file name with no adverse effect whatsoever upon the workings of the disk. A cleaned file name entry will be overwritten in exactly the same way as a deleted entry would when saving a new file to the disk.

ERROR TRAPPING

It is important to note that because of the use of the computer's own internal disk access routines, the normal Basic error trapping system does not function in the usual way. In the light of this when using the internal routines, The Disk Companion may think it is reading and writing to a disk and will display all the appropriate messages, when in reality there is no disk in the selected drive. Some errors can be trapped though and a small error trap routine has been included to account for these. When reading a disk's directory (option 1), the screen can go haywire when a disk is not present and the program thinks that it is reading the disk's directory. To account for this and to force an error, a specific screen location is checked and if the display does go wrong, then an error message is displayed and ESCAPE must be pressed to exit to the title screen.

Error trapping problems are compounded by the use of modified disk drives such as by using a Lazer enhancement. The extended RAM in these modified drives can confuse The Disk Companion since data can be read from the drives RAM without having to access the disk each time. Errors of this nature are naturally outside the program's control.

Although much has been done within The Disk Companion to force errors where necessary, the main point is to be aware of these potential problems and not to remove the disk from the drive whilst in use.

VERIFYING PROBLEMS

Due to some types of corruption, a disk may need to be verified twice in order to establish the correct sector count on the disk. This will be indicated by errors shown in the sector count at the top of the screen when viewing the disk's directory using option 1. This is a very rare occurrence and is normally only associated with VTOC sector corruption when a single density disk appears to become an enhanced density disk and vice versa.

OTHER PROBLEMS

The Disk Companion can cope with many types of data corruption, but obviously it cannot cope with ALL corruption. In the main, The Disk Companion will cope very well with the normal types of disk problems which may occur, but if a disk was to be deliberately corrupted beyond the normal level in order to try to beat the program, then it may well fail. The Disk Companion was never designed as a game, but was designed as a utility to repair the normal disk problems which do occur.

Opposite ☞
The internal workings of The Disk Companion

HOW THE DISK COMPANION WORKS

ACCESSING THE DISK

After entering the number of the disk drive to be used, The Disk Companion determines the format density of the disk in the selected drive by trying to access sector 1000. If accessed successfully, then an enhanced density disk is present, but if an error is found, then a single density disk is in use. In this manner, the VTOC sectors do not need accessing to establish this so that the disk's format density can safely be determined even in the case a VTOC data corruption.

Disk access is achieved by the use of the computer's own internal routines for reading from and writing to the disk via the use of a machine code string (Z$). The Disk Companion makes use of two types of buffers to hold data prior to reading from or writing to the disk. When figures are required for calculations, the cassette buffer (CASBUF) is used whose address is 1021, but when calculations are not required, the various strings are used instead. The address of the cassette buffer or that of the appropriate string used is POKEd into the data buffer vector address at locations 772 and 773 (DBUFLO/HI). The sector to be accessed, whether by read or write is located by POKEing the sector number into the vector address at locations 778 and 779 (DAUX1/2). The direction of data transfer (read or write) is POKEd into location 770 (DCOMND), which is 82 to read the sector or 80 (or 87 if write verify is enabled) to write to the sector. The disk drive number selected for use, either "1 or 2", is POKEd into location 769 (DUNIT).

THE DISPLAY LIST

The Disk Companion uses a custom display list which provides a mixed mode screen with two lines of mode 1 at the top for the displaying the titles and 23 lines of mode 0 forming the main part of the screen which is lined for clarity. The display list is stored in the form of a string (DL$) where the fifth byte (high byte of the screen RAM address) is altered according to the language used. The screen RAM in the standard Atari basic is at address 40000 whilst in Turbo basic it is at address 48192. The display list is altered by

DL$(5,5)=CHR$(PEEK(89))

Although The Disk Companion is written in Turbo basic, the standard Atari basic screen RAM address is required when the program is compiled.

THE BOOT SECTOR DATA

The data against which the boot sectors of a disk are checked is stored in a string (BOOT$) which is dimensioned to 384 (128x3) bytes and contains the data of all three sectors in sequence. One point to note is that the 77th byte of the string is the double quotes character which would obviously cause an error if it were included in the string in the normal way, therefore this byte is replaced with a space and loaded separately by using BOOT$(77,77) =CHR$(34). This only applies to a string which is defined directly as used in the program and obviously not to a string loaded via a loop reading DATA statements. The advantage of defining a string directly is that it has virtually no initialising time when compared with the time taken to read data.

TEXT ERASING

This is achieved by a custom written machine code routine in the form of a string (E$) which erases text from a mode zero screen in whole line units. It is configured as I=USR(ADR(E$),A,B) where "B" is the number of lines to be erased starting with line "A".

THE STRUCTURE OF THE PROGRAM

THE PROCEDURES

BEEP: The key click
BELL: Single bell ring
BELL2: Double bell ring, actions BELL twice
BLANKVTOC: Blank VTOC data stored in two strings, one for each VTOC sector which is used for calculating the VTOC when verifying a disk
BOGUS: Deletes all bogus file names which may appear in the directory of a disk due to corruption
CAUTION: Prints a cautionary warning on the screen when using the potentially destructive functions
CHECK: Establishes the format density of the disk and sets up the maximum number of sectors available
CONSTRUCT: Constructs new VTOC data for verifying a disk and loads the results into two strings for writing to the disk
DELETE: Deletes all files which have sector link data corruption
ENTRY: Prints the entry or exit message on screen and waits for either ESCAPE or RETURN to be pressed
ESCAPE: Prints "ESCAPE Exit" on screen and waits for ESCAPE to be pressed
FILE: Gets the name of a file
FILENUM: Gets the number of a deleted file for restoring
GETVTOCS: Loads the main working part of the VTOC table from both sectors into a string
INIT: Initialises the program
KEY: General routine for getting a key press
KEY1: Waits for either RETURN or ESCAPE to be pressed
KEY2: Waits for only the ESCAPE key to be pressed
LOADBITS: Calculates the status of all the bits in the VTOC and loads them into a string
NUMST: Gets the number of sectors used and the starting sector for files in the disk's directory
OPEN: Closes all open files found while verifying a disk
UPDATE: Calculates the number of free sectors remaining after the disk has been verified
VTOC360: Reads the VTOC sector 360, gets the maximum number of sectors on the disk and the number of free sectors available
VTOC1024: Reads the enhanced density VTOC sector 1024 and gets the additional number of free sectors stored there
WRITE: Writes the newly constructed VTOC data to the disk

LABEL NAMES

MENU: Entry point for printing the menu on screen
MES: Prints a message on the screen and exits back to the menu
MES1: Prints a message on the screen and exits back to the title screen
OP1 to OP8: Entry points for the eight options on the menu
SETUP: Entry point for printing the title screen
VERIFY: Entry point for verifying a disk after a deleted file has been restored

MAJOR STRINGS

BIT$: Stores the result of calculating the status of the VTOC bits by the LOADBITS procedure
BOOT$: Stores the boot sector data
DEN$: Loaded with either the word SINGLE or ENHANCED and used for screen display purposes
DL$: Custom display list stored as a string
E$: Machine code routine for erasing text from the screen
F$: Used to store a file name
M$: Used for printing general messages on the screen
U$: General purpose utility string
V$: Stores the main working part of a disk's VTOC
VBI$: The VBI routine
VTOC1$: Used to read and write VTOC sector 360
VTOC2$: Used to read and write VTOC sector 1024
Z$: Machine code routine for accessing the internal disk read/write routines

MAJOR VARIABLES

BIT: Calculated bit within each calculated byte which is used when constructing a new VTOC table for a disk
BYTE: Calculated byte within each VTOC sector used when constructing a new VTOC table for a disk
CHK: Used for integrity checking
CLEANED: Stores the number of deleted sectors cleaned when cleaning a disk
COUNT: Counts the number of sectors used when verifying a disk and is used to establish the number of free sectors remaining on the disk
DEN: Stores the format density of a disk, either 0 for a single density disk or a 1 for an enhanced density disk
DLTD: Number of corrupted files deleted during verify
DRV: Number of the disk drive to be used, either 1 or 2
FILE: Address of a file within any one of the directory sectors
FIN: Last sector of a file which is used in restoring a deleted file
FREE: Number of free sectors on a disk
FREE2: Number of free sectors available in the second VTOC sector 1024
KEY: Stores the ASCII code of the key pressed for menu selection
LOC: Location address of each file entry within a directory sector
MAX: Maximum number of sectors available on a disk, either 707 or 1010
NUM: Generally the number of sectors in a file
OPN: Number of open file closed during verify
ST: Starting sector of a file
STAT: Stores the status of a file name entry and is used when printing the disk's directory
TOTAL: Total number of bytes a file consists of and is used when restoring a deleted file
UNUSED: Stores the number of unused sectors bypassed when cleaning a disk
USED: Stores the number of used sectors bypassed when cleaning a disk
VER: Stores either 80 or 87 for use in writing with or without verify

VARIABLES AS CONSTANTS

There are many constants in the listing which have been replaced by variables in order to save on memory space. These variables are the numbers themselves preceded by the letter "N" so that the value of these "constant" variables can instantly be seen, typically they are N4=4, N5=5, N6=6, etc.

THE LISTING

The Disk Companion is available on the Issue 73 disk ready to run. If you want to attempt the mammoth task of typing in the listing instead, or you want to study the printed listing, a fully TYPO coded listing is available from NEW ATARI USER upon request. The program is substantial and, don't forget, it is written in Turbo Basic.

ZORK I

Mark Stinson gives you some hints on playing one of the all-time Atari classics now available, as Disney would say, for a limited time only

This issue brings you a short review of an incredible game, Zork I by Infocom. This game is an all time classic, on all formats and is now available for less than £3. The review is short as I have put together a number of hints for those of you that are stuck and want to play the game to its conclusion.

Much has been written on Zork, indeed it even spawned a book of the game, however there will be many Atari users who have bought their machines relatively recently who may not have come across it. Well, it all began with a huge mainframe game called Adventure, by Crowther and Woods. Marc Blank and Dave Lebling co-authored Zork on a mainframe, and later worked together at Infocom to code the game in three sections, Zork I to III. The game was written in ZIL (Zork Implementation Language) and set the standard for all future computer adventure games. The series is still recognised by many as the ultimate in adventure.

Many of you will never have tried an adventure, or will have had a go at some poor game and given up in disgust. I can only say give Zork a try, it was for many the sole reason for buying a home computer. As Page 6 have a supply of Zork I at a ridiculously low price it has to be worth a go even if it turns out not to be to your taste.

Zork is set in a huge underground empire which has long been abandoned by all but a few colourful characters. Your aim in Zork I is to collect a number of fabulous treasures dotted about the empire. In order to do this you must first solve some truly diabolical puzzles, and learn to apply logical thought to difficult situations. I do hope that you will give this classic game a go, it could be your last chance.

HINTS

House and Outside

How do I open the egg? *Give it to someone more skilful than yourself (later in the game)*

How do I open the grating? *From the inside!*

How do I get inside the house? *Open the window on the east of the house*

How do I get the bauble from the songbird? *Take the contents of the egg and activate it*

How do I get on the rainbow? *Look for something colourful later in the game, then wave it at the rainbow*

How do open the door in the kitchen? *Solve the puzzle of the Cyclops later on, and you will see*

How do I get underground? *Pull back the rug to reveal the trap door*

Cellar

How do I get past the troll? *Use the sword, and hope for the best*

How do I beat the thief (if he turns up here or elsewhere)? *When you have enough points he is not too difficult*

Maze

How do I get through the maze? *Send a s.a.e. to Page 6 and they'll send you a copy of the map*

What do I do with the rusty knife? *Leave well alone*

How do I beat the Cyclops? *He is not proud of his father, and hates to hear the name of the man that beat him (ODYSSEUS)*

Other areas

How do I get the platinum bar? *Type ECHO*

How do I cross the lake? *Touch the mirror*

How do I cross the river? *You need a dingy and something to inflate it*

How do I enter the Dome room? *Use the rope*

How do I enter Hades? *By lighting some candles, ringing a bell, and reading a book!*

How do I open the dam? *Press the yellow button in the control room then undo the bolt with the wrench*

How do I get past the bat? *Carry something smelly! Garlic?*

How do I get light into the machine room? *Use the basket*

What do I do with the machine? *Find some fuel*

Is the shovel useful? *Dig in the cave*

Treasure and points list

Treasure	points	points for putting in case
Egg	5	5
Canary	6	4
Painting	4	6
Bar	10	5
Torch	14	6
Coffin	10	15
Sceptre	4	6
Trunk of Jewels	15	5
Trident	4	11
Jade	5	5
Bracelet	5	5
Diamond	10	10
Coins	10	5
Skull	10	10
Scarab	5	5
Emerald	5	10
Chalice	10	5
Pot of Gold	10	10
Brass Bauble	1	1



by Mark Stinson

TUTORIAL TIME

by Ian Finlayson

It is with some sadness that I start this article as it is the last regular article I will write for Page 6. Looking back it was Issue 20 (March/April 1986) when Les accepted my first article for printing - what a proud day! After that there was quite a gap before I started to contribute regularly about a year later and I have been contributing almost continuously since.

Page 6, which later became New Atari User, must be one of the longest running computer magazines in the country going back to December/January 1982. It is evidence of Les Ellingham's determination, perseverance and dedication to the Atari, and I wish him every success in keeping it running with the help of you, the readers.

Anyhow, enough reminiscing and on with the article. I am following on from my last piece on Turbo Basic by describing some supporting material which is available in the Page 6 PD Library.

TURBO BASIC SUPPORT DISK

This is disk DS#20, and I will not say too much about it as virtually all the material is duplicated in the three disk set which I will mention next. If you already have Turbo Basic and only need comprehensive documentation then get this one, but I would recommend the three disk set as they have a slightly updated version of Turbo Basic and more tutorial material.

TURBO BASIC PROGRAMMERS KIT

This is the three disk set. It is all in Turbo Basic and the overall contents is:

Disk 1 - Side A: Compiler Documentation in English. Turbo Basic Documentation Update - describing the differences in the North American version
Disk 1 - Side B: Advanced Turbo Basic Documentation (almost the same as DS#20)
Disk 2 - Side A: Tutorial on structured programming in Turbo Basic
Disk 2 - Side B: blank
Disk 3 - Side A: Example program modules
Disk 3 - Side B: Tutorial style descriptions of how to use the modules on side A. (Some repeats of DS#20)

As you can see this Programmer's Kit has all you need to get going in Turbo Basic programming.

DOCUMENTATION

The Documentation and Tutorials use a reader that allows you to read them on screen or print them out to a printer. I would recommend printing all the text out as it is much easier to refer to in this form. Although the text is clear to read on screen it is not quick to find the particular subject you want to review, and if you overshoot the subject you are interested in you cannot go back, but have to start from the beginning again. I thought of loading the text files into a word processor so I could use the search function to find particular topics and move up and down through the document, but the main documentation file and the file containing descriptions of the tutorial modules are both too big for Textpro or 1st XLent word processors to load fully. Anyhow I guess it would not be convenient to have to exit your emerging Turbo Basic program to load and review the documentation - it has to be printed out.

The Advanced Turbo Basic documentation covers all those parts of Turbo Basic which are not in Atari Basic and all those commands which are changed from the Atari Basic originals. The descriptions are quite clear and concise, and usually accompanied with a few lines of code illustrating the syntax in context. It is more helpful than the documentation which came with the original Turbo Basic, and is supplemented by the file on Disk1 Side A which brings the documentation right up to date reflecting the latest changes in the North American version of Turbo Basic.

Also included in the documentation is an English language version of the instructions for using the compiler.

STRUCTURED PROGRAMMING TUTORIAL

The tutorial on structured programming will be very useful to those of you who are starting out in Basic programming. It uses an example "Disk Secretary" program to illustrate the concept and does a good job of demonstrating where to start, how to structure your program and gain the advantages of a modular programming style - writing individual procedures in self contained modules which can be reused in other programs at a later date.

OTHER TUTORIALS

The other tutorials reinforce the message in the structured programming tutorial. There is one covering all the individual procedures supplied in the Programmers Kit. There are 38 little procedures in all covering a wide variety of needs such as:

Centring text
Scrolling
Listing variables
Printing out in 38 column format
Hex to Dec conversion

As well as the main tutorial covering the program modules there are two separate tutorials on How to do Sorting and How to use Arrays. These two topics are a bit too complex to fit the short description style of the other tutorial material and both get a good airing in a clearly understandable style.

SUMMARY

In all this is a very good package, and a must for anyone starting out or in their early days as a Basic programmer. Do look closely at the structured programming tutorial. It will help you to get into good habits right from the start.

If you have been programming in Turbo Basic for some time you may not find much that is new, but the descriptions are clear and the commands are well illustrated with example code so you may find that this material can illuminate some areas of Turbo Basic that you have not really fully appreciated. At the incredible low prices of the Page 6 accessory shop you cannot afford to miss it!

GOODBYE!

Here I must sign off for the last time. I thank Les very much for the opportunity his magazine has given me to develop my early knowledge of computers. There is some slight regret in the fact that my hobby has expanded to an extent that I now earn a substantial part of my income from computers (PCs I must confess!!) and this leaves me little time for the Atari, but I do continue to enjoy it.

The Accessory Shop

ISSUE 73

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Breakout was the original simple yet totally addictive game and this enhanced version will provide even more addictive fun. Needs paddles.

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Fight Night brings you all the thrills of the boxing ring as you face five of the most brutal fighters ever. Its five separate battles are total war with relentless action. The Boxing Constructor Set allows you and your opponent to create your own perfect boxers, selecting stamina, intellect and style. Train, spar and step into the ring to pit your boxer against the computer or another opponent.

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POLE POSITION

Everyone has heard of Pole Position, the racing game that inspired almost every racing game since. It may be the original and some other games may have added features but Pole Position still retains its challenge after many years. One of those games that has exactly the right balance of game play and graphics to make it a classic that will last forever. If it is not in your collection, make amends now!

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HARDBALL

All the thrills of American baseball can be yours on a summer afternoon in the ballpark. Sit behind home plate, along the left field line, down the right field line or join the manager in the dugout. Look over the pitcher's shoulder as he throws the next ball. You control all the action of the batsmen, pitchers and fielders as you try and battle your way to the top of the league. An exciting game for one or two players.

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BASIC CARTRIDGE

Some programs, especially some early public domain programs won't run on the XL/XE but they will if you plug in the old version of Basic.

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DISKS ... DISKS ...

ZORK 1

The Infocom classic and the adventure game that changed the way all future adventures were written. The Great Underground Empire of Zork is well documented by now and thousands of players have become addicts graduating to Infocom's more difficult adventures. Zork I is the ideal introductory level adventure for beginners or those with a little experience. If you have never ventured underground before now is the time to try, it's never been cheaper to expand your universe! Classic original Infocom packaging with excellent manual and a map.

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JUGGLES RAINBOW

A first computer experience for children aged 3 to 6 that teaches the concepts of above, below, left and right plus letter recognition allowing children to enjoy learning with colours and music and games they can create and play themselves

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Slinking through an unknown land Nibbler finds himself in an iridescent world of constant change. As time grows short his body grows longer and he risks running into himself. Can he survive?

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Join the whackiest fighting troup around as you do battle with all and sundry. Not a simulation, just a good, old-fashioned arcade game hung around a dodgy premise! Give it a go anyway, what more do you want for a quid!

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RAMPAGE

It's rough and tumble all the way as you control three incredibly nasty characters which bear a remarkable resemblance to King Kong, Godzilla and Wolf-man through an orgy of destruction in Chicago, New York and San Francisco. You have 150 days of destruction in 50 different cities. Time for some revenge!

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DRUID

Another classic in which, as Last of the Great Druids, you wander through the Dungeons of Acamantor with your mighty Golem by your side on a quest to destroy the four demon princes. As you delve deeper into the dungeons you will find chests containing spells of formidable power to aid you and Pentograms of Life which will heal and revitalise you. Excellent graphics and superb gameplay make this one of the best arcade games.

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GAUNTLET THE DEEPER DUNGEONS

If you have the original Gauntlet disk then you will know how good the game is and will want to extend play with the Deeper Dungeons. Over 500 new dungeons are here for you to explore. This is the way to revive your interest in Gauntlet and play on for many more hours or days! This is a data disk only for the original Gauntlet

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DESPATCH RIDER
Join the growing band of street demons who terrify the population of the big cities to get the parcels through.

FEUD
You must "out-spell" your rival Wizard. Tread carefully as strange things can happen in this game of magic

FOOTBALL MANAGER
Everything you might want in a managerial simulation. Far too many features to describe, but you won't be disappointed

GHOSTBUSTERS
At this very moment hundreds of ghosts are making their way to the infamous spook central. Only you can save the world from disaster

GUN LAW
Four months of bloody alien attacks have taken their toll. You are left to fight alone against ruthless and bloodthirsty killers with just a single machine gun

HENRY'$ HOUSE
Little Henry has shrunk and must navigate his way through the royal household to find the cure. Voted one of the all time great games

INVASION
Mobilize your units and prepare for battle. This all action space conflict requires skill, strategy and tactics.

KIKSTART
The ultimate off-road motorbike scramble. Guide your rider over the obstacles in this great game for 1 or 2 players

LOS ANGELES SWAT
Rescue the hostages from the terrorist gangs holding out in West L.A. Clean up the streets. Blow away the bad guys

MASTER CHESS
An excellent chess simulation with all the correct moves, various openings, in fact everything to keep you challenged

MILK RACE
Cycling 1,000 miles is no mean feat - and you could end up feeling pretty exhausted by the time you've finished

MR DIG
An old favourite in which Mr Dig has to dig for hidden food supplies in the 'Meanie' territory below ground.

NINJA
Blasts the belt off all other martial arts games! It says on the inlay! Someone sure reckons this is the best punching, kicking, ducking and diving game of all

ON CUE
A challenging real life simulation which combines Pool and Snooker on the same cassette. An absolute must for both enthusiasts and beginners alike.

PANTHER
Save the last humans on Xenon. Take your ground attack ship through this 3D scrolling mega shoot-em-up with great graphics and unbelievable soundtrack

PENGON
Can you save Penguin Willy from the ferocious mutant sea lions? Stun them by knocking them against the walls or crush them with sliding ice blocks

PLASTRON
Take your place in a small band of pirates out to steal fossil fuels from the biggest corporation in the galaxy.

PROTECTOR
Assigned to the US Army Helicopter Training School your aim is to become the best chopper pilot in the West

ROGUE
Your task is to search the Dungeons of Doom for the Amulet of Yendor. You will encounter fearsome monsters and fiendish traps to challenge all your skills

REVENGE II
The Mutated 90 foot high, laser spitting death camels have rebelled against their captors the Zzyaxians and are out for revenge! A Jeff Minter classic

ROCKFORD
The only true arcade version of the classic game Boulderdash. Explore 4 levels on each of 5 different worlds

SIDEWINDER II
It is 27 years since the final battle of the war with the aliens. All this is about to change. Step aboard your craft to defend mankind in this space blast

SPEED HAWK
Defend the ring worlds of your solar system from space pirates. Another of the great space games

SPEED ZONE
Enter the Speedzone in a frantic defence against alien forces. A survey ship comes under attack and your "Starfire" class attack craft is launched

STAR RAIDERS
What more can be said. Probably the best computer game in the world - ever!

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Equipped with the latest in anti-gravity pods and Laser weaponry, battle your way through each of eleven dungeons

UNIVERSAL HERO
Only seven seconds left to save the planet! Universal Hero has to save his skin and everybody else's by finding bits to repair a shuttle

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ST PUBLIC DOMAIN



ROUNDUP

THE WORLD OF BUDGIE

PART 3

Welcome to my third and final look into the world of Budgie UK software. This time I will review as many titles as possible. Let's go ...

by Stuart Murray

KNOCKS AND CROSSES

FIRST DOMINOES is an excellent version of the popular pub game. One to five players play with nine dominoes (using a double nine set, i.e. dominoes marked 0-9). You lay the dominoes in the standard way. A control box can be called up at any time which displays your dominoes, how many each player has left, and the end numbers. It also allows you to 'knock' when you cannot lay a domino. The speed of the game can be altered from 0 to 130. The default is 100 and this is just fine.

The dominoes are well drawn. They are big enough to be easily identified and yet can all be laid on one screen. This game is surprisingly addictive and any fan of dominoes should have it in their disk drive now!

For fans of crossword puzzles comes **BUDGIE'S CROSSWORDS VOL. 1**, a collection of 25 crossword puzzles. Just over half of the screen consists of the crossword itself. Alongside is an info box where you enter your answers. By pressing the Spacebar you can call up the list of clues. You then go back to the info box and enter which clue you wish to answer, e.g. 16A. If you are stuck, there is a facility to give you the answer to a clue. At the end you are told how many clues you answered correctly and how fast you worked. You are also given a score and a rating.

I found it fiddly using the keyboard to enter the clues. The puzzles themselves were enjoyable enough but I just kept wishing that I was using a pen. Crossword fans will enjoy this disk. Others may be best sticking with the crossword in the daily newspaper.

Want to design your own crosswords? No problem - Budgie have the answer with **XWPUZZLE**. This utility allows you to enter the size of the crossword grid (anything from 3x3 to 37x18), limit the maximum word length, etc. XWPuzzle then kicks into gear and inserts words into the grid. All you have to do is make up the clues and you have your very own crossword creation. The whole process takes only a few minutes and you can even print out the final grid. A very original piece of software.

With Budgie Crosswords Volume 1 and XWPuzzle you have the complete crossword package for your ST.

PRESS THE ESC KEY AT ANY TIME TO STOP
CROSSWORD PUZZLE: 7

ACROSS
1 CELEBRATION
6 BLIND ALLEY
9 CAVITY
12 SPIDER
14 AFFRONT
15 JETTY
16 FABRIC
17 SALUTE
18 GENDER
19 GLOBULE
20 DEFECTIVE
22 GRAVEN IMAGE
24 MUSCULAR
25 SUPPLEMENT
27 WINE CASK
28 PORTION
29 VULNERABLE

DOWN
2 SMUGGLE
3 CHANGE COURSE
4 DELUGE
5 REPUDIATE
7 KILL-JOY
8 PERCHED
9 GOOD BUY
10 DEFLECTION
11 PROMOTE
13 SUMMIT
16 CARMINE
18 SEASONING
20 TRANSPORTED
21 LANGUAGE
23 EVEN SCORE
24 MASS OF EGGS
26 SMALL ISLAND

SELECT CLUE TO ANSWER
CLUE: 22A
THIS IS A 4 LETTER WORD
TYPE ANSWER (SPACE CANCELS)
ANSWER:
PRESS * KEY FOR ANSWER

One of many crosswords taken rom Budgie's CROSS-WORDS disk. See if you can solve it and get the disk for more!

PREDICT AND EDUCATE

BUDGIE'S ASTROLOGY is a package which deals with the main essentials of astrology. Everything is controlled from an Astrology Desktop which gives you access to tutorials and pointers into the subject. Many points are covered including planets, signs, houses, charts and prediction. There is also an astrology bibliography.

Many example charts of famous people are included. You can examine the charts of Yasser Arafat, Brigitte Bardot, Michael Jackson, Arthur Scargill, etc.

I rarely read horoscopes and usually reach for the remote control when Russell Grant appears on the TV (doesn't everyone?). However, Budgie's Astrology does offer a first hand look into the subject and was initially interesting. Long term interest is suspect unless you have a true feeling for astrology.

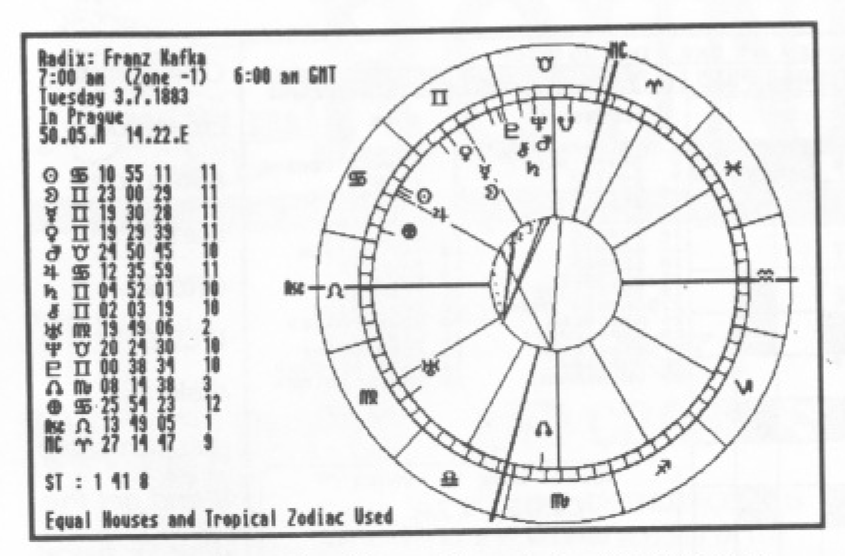
THE SPITTING FISH is an educational title which contains a shooting game and a multiplication program. In the Spitting Fish game you control a fish which catches insects by spitting at them. If hit, an insect drops into the water and the baby fish feed upon it.

The second part is called Dice Tables. Dice roll onto the screen and the child must multiply the numbers and enter the correct answer by clicking on large numbers at the bottom. There are lots of happy faces if the correct answers are entered.

The Spitting Fish is nothing special. For a brief time it will entertain and educate a young child, however the repetitiveness will soon have them asking for something else.

RACE AND BLAST

If you're looking for a horse racing program for your ST then Budgie can offer **HORSE RACING SIMULATOR**. You can



Okay, so Kafka is hardly exciting, but with Budgie's ASTROLOGY you can work out charts for your family and friends or study other famous personalities like Bob Dylan, Brigitte Bardot, John Lennon and many more

buy and sell horses, check on forthcoming races, enter your horse(s) in a race, examine the form book and bet on a horse. The program is controlled via an icon menu and is very easy to use.

The actual horse race itself (the most important part) is colourfully animated as the horses race along the track to some pounding music. The graphics are simple but effective enough to entertain. Another enjoyable disk from Budgie!

Next up is **EXODUS**. This is an arcade shoot-em-up which is a mixture of Xenon and Xevious. You fly over a futuristic landscape blasting everything in sight. The action is viewed from a bird's eye perspective with a large on-screen radar warning of approaching danger. You can fly over the landscape in any direction. Coming at you are airborne and ground-based crafts. There are also many installations which must be destroyed.

Digitized sound effects are used throughout. From blasts and explosions to Hudson's infamous call, "That's it: game over man!" (from the movie Aliens). The graphics in Exodus are detailed and colourful. The screen layout gives a true feeling of space - the landscape is large! Xenonheads get your fix here!

Another Budgie shoot-em-up is **EXTERMINATE**. It uses the same title music as Exodus but unfortunately that's where the similarity ends.

After a very long and rather average intro sequence Exterminate finally begins. It is a horizontal shoot-em-up in which you must travel deep into a cavern and destroy the Devil's Egg. In your path are a number of swirling and darting nasties.

Exterminate is basically a poor man's Vanguard. The graphics are colourful but they are poorly drawn and give the appearance of a child's game. The first sight of your ship causes a smirk when you see how similar it looks to a bobsled. The gameplay is quite fast and the actual shoot-em-up element is reasonably challenging.

If more emphasis had been placed on presentation, Exterminate would have been a reasonable clone of Vanguard. As it stands it is a dodgy title amongst the majority of quality Budgie games. It also has some bugs which caused it to bomb a couple of times on my STE. Stick with Exodus!

STACK AND SQUIRT

If you've been busy playing Stack 'em Up (reviewed last time) then you may also be interested in **QUATRIS**, another quality Tetris clone.

Like Stack 'em Up, Quatris is Tetris with a subtle difference. You must manipulate cubes instead of lines. The cubes contain four Quats, which are basically four smaller cubes. The Quats are coloured and patterned and must be laid together in groups of four of a kind (boxes or lines). If you drop a cube off-line then two Quats land on the highest point and the remaining two fall down the side. This is an intelligent touch which keeps the game flowing and doesn't allow the screen to become unnecessarily cluttered.

Quatris is a timed game, with a bar running slowly down the left. The objective is to last until the end of the time limit without being overwhelmed. Quatris is another interesting variation on the Tetris theme. Good stuff.

A noteworthy platform game is **BERT THE SQUIRT**. This is a colourful title which has you collecting fruit from various platforms whilst avoiding lots of animated baddies. There are traps, icy platforms, springs, etc. The gameplay is fast and smooth. Digitized sound effects round off the game perfectly. Bert the Squirt is one of the few quality platformers in the public domain!

DOUBLE DASH

Of course, no column on Budgie UK is complete without including **DOUGLAS ROCKMOOR** (1MB required). This is the ST version of that truly classic 8-bit title Boulderdash. All of the original elements are included. Even the graphics are drawn in the same blocky style!

The aim is to travel through a large cave collecting enough diamonds to open the exit. In your path are boulders (which fall if unsupported!), walls and a host of baddies. The gameplay is fast and frustratingly addictive. As in the original, sound is sparse but this does not detract from the sheer playability of the game. A real attempt has been made here to create a faithful representation of what was ultimately a perfect game anyway. Douglas Rockmoor is Rockford reincarnated!

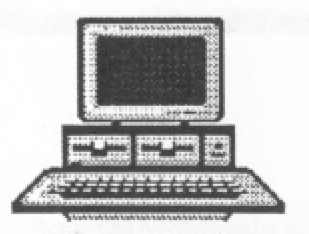
If you want more of Douglas Rockmoor then you must get your hands on **DOUGLAS 2**. This sequel features another 25 levels of arcade puzzling (1/2MB and 1MB versions are included on the disk). It is playability personified!

This concludes my 3-part series on Budgie UK. There are many other quality titles in the Budgie range, some of which have already been featured in PD Roundup, e.g. APTITUDES, PACMAN ST, OOH CRICKEY WOT A SCORCHER, etc. No doubt further Budgie titles will appear in forthcoming columns.

Around eight out of ten Budgie titles are quality efforts which are even better value for money now that they are PD. It is a shame that we will not be seeing any new titles from Budgie but at least their range of 100+ ST disks can now be enjoyed for many years to come. Budgie all the way!

ROUNDUP RATINGS:

ST385 DOUGLAS ROCKMOOR	**94%**
ST492 DOUGLAS 2	**94%**
ST310 EXODUS	**87%**
ST699 DOMINOES	**86%**
ST612 QUATRIS	**84%**
ST482 BERT THE SQUIRT	**80%**
ST608 HORSE RACING SIM.	**78%**
ST517 XWPUZZLE	**78%**
ST1007 BUDGIE'S ASTROLOGY	**70%**
ST305 CROSSWORDS	**61%**
ST906 THE SPITTING FISH	**49%**
ST311 EXTERMINATE	**25%**



JOURNEY INTO CYBERSPACE

John S Davison continues to explore the Internet and this time asks what it is going to cost



In the last issue I described how I got myself connected to the Internet via CompuServe for sending and receiving electronic mail. This time I'd like to tell you a little more about CompuServe and its links with the Internet, and give you some idea of the costs involved.

EARLY BEGINNINGS

CompuServe seems to have been around forever. I can remember it being mentioned in the legendary Antic and Analog magazines back in the Golden Age of Atari, but the huge hourly online charges and the need for international phone calls to access it put it strictly in the "millionaires only" class.

Things are very different now though. Over the last few years CompuServe have built their own international communications network, which means you can now access the service via UK phone numbers. Also, competition between online service providers has driven charges down to a reasonable level, so a CompuServe subscription now costs only around £6.50 per month. For this you get: unlimited access to over 120 of CompuServe's "Basic" services; three hours of Internet connect time; up to 90 e-mail messages; and a copy of CompuServe's excellent monthly magazine delivered to your door.

Basic services cover areas such as news, sport, weather, travel, leisure, electronic shopping, games, entertainment, finance, and a reference library of assorted information including several online encyclopaedias. It includes a rapidly growing collection of UK oriented material too. Support and help in using the service are also available here, including areas where you can practice sending messages before doing it for real. It's mainly text based, so can be accessed easily from an Atari ST or 8-bit system running an ASCII based communications program.

Note - CompuServe is USA based so charges are levied in US Dollars, then converted to your local currency for payment by credit card. There's no VAT to pay, for the same reason. Subscription is actually $9.95 per month, which in the UK works out at around £6.50 depending on exchange rate.

WATCH THOSE COSTS...

Basic services are only a small fraction of CompuServe's total portfolio - there are more than 2000 other areas of CompuServe you can hook into if you wish, but they cost extra. The next step up from the "Basic" services are the "Extended" services, charged at $4.80 per hour (about 5p per minute) of connect time. Over 500 of these are "forums" (fora?), each of which is like a bulletin board in its own right, between them covering a very wide range of topics.

One of the big attractions for computer enthusiasts is that virtually every major computer hardware and software company and product (including Atari) is represented somewhere on these forums. Stuck with a technical problem? Just post a message in the appropriate forum and you'll quickly get help, often from someone who helped design and develop the product. The forums are open to anyone, so you're also likely to get rapid assistance from other knowledgeable sources. For example, after posting a forum message requesting help with a Flight Simulator technical problem I quickly received a reply from none other than author Charles Gulick, whose books on Flight Simulator adventures I reviewed in these pages a few years back!

As well as the message area a forum also has a series of associated libraries containing all manner of useful bits and pieces, such as software utilities, version updates, bug fixes, articles about the topic, etc. Any of this material may be downloaded at a cost of 5p per minute, which is why you need the fastest modem you can afford. It soon pays for itself if you do a lot of downloading.

You can also engage in real-time conversations with other people logged into the same forum, either on a one-to-one basis, or as a group discussion with a number of other people. Often, a forum will host a real time "conference" in CompuServe's equivalent of a conference centre. Famous celebrities frequently make guest appearances at these - film, TV, and recording stars; big names from the world of sport; and major figures from the computer industry have all appeared - and you can "talk" to them live via your screen and keyboard. There's also a special area of CompuServe called CB Simulator, which works rather like CB radio. You can "tune" into one of many chat channels and join in with any live conversations you find in progress. You're likely to meet people from all over the world here, and such meetings often result in further communication using e-mail - pen-friends in cyberspace!



BUSINESS SERVICES

There are other tiers above the Extended services, these being the "Premium" and "Executive" services. Further additional charges apply to these, depending on what information you're retrieving. Premium charges range from a few cents to tens of dollars per item accessed, and the Executive service costs $15 per hour (about 16p per minute). The really expensive items are often used only for business purposes and therefore the costs can be justified on business benefits obtained.

If you're disciplined in the way you use CompuServe then it needn't be costly. I log onto the service every day to collect and send



e-mail, look up a few share prices, gather the latest computer industry news, and occasionally spend a little time in forums or surfing the Internet - yet my monthly bill is only usually around the £10 mark. Phone charges are extra, but I normally dial in after 6:00pm to take advantage of off-peak rates. If I need to spend a lot of time online (to download shareware programs, for instance) I do this at the weekend at even lower phone charges. I've also subscribed to Mercury, as their long distance rates are considerably cheaper than BT's.

GATEWAY TO THE INTERNET

CompuServe's Internet facilities are fairly new. They've been implementing them at an accelerating rate over the last few years, and almost everything is in place now. Internet e-mail came first, followed later by FTP (File Transfer Protocol - for downloading files from remote systems on the Internet), then Newsgroup access (a bit like the message areas of CompuServe's own forums, but there are about 12,000 of them!). They've recently added Telnet (for logging into remote computer systems connected to the Internet), and the biggest bandwidth guzzler of them all - the World Wide Web. You get three "free" hours of Internet connect time included in your monthly subscription, with additional time charged at $2.50 an hour (about 2.5p per minute).

E-mail is the most basic (and for me the most important) Internet application offered. For the uninitiated, sending e-mail is the electronic equivalent of sending a letter to someone. Its main advantage is speed - you get virtually instantaneous delivery of a message or data file to any Internet e-mail address in the world. Actually, e-mail messages aren't usually delivered directly to your system, but are held in a "mailbox" on your service provider's system until you log on and download them.

CompuServe has two types of e-mail - there's "internal" e-mail between CompuServe subscribers, and "external" e-mail between a CompuServe user and someone subscribing to another service. External mail is directed through a "gateway" to/from the outside world, for instance CompuServe's Internet gateway carries mail from CompuServe to other services and users connected directly to the Internet. You get a nominal $9.00 worth of e-mail included in your monthly subscription, and each message sent costs 10 cents - hence the 90 "free" messages per month. Additional messages cost 10 cents each.

However, there are a number of complications - 10 cents covers you for sending up to 7,500 characters of data (about 3 pages). Additional material is charged at 2 cents per 7500 characters. Also, incoming internal messages from CompuServe users carry no charge, but those from the Internet carry "postage due" charges at the same rates as the sending charges. These are also clocked up against your $9.00 allowance, but there's no real additional cost until your $9.00 is used up. Incoming external e-mail isn't charged for unless you actually read it - you can delete it before reading if you're too tight-fisted to pay the postage due! Even though I send and receive lots of e-mail I rarely exceed my $9.00 monthly allowance.

E-MAIL ADDRESSES

As with ordinary mail, e-mail users need an address to which e-mail items can be delivered. You're given this address when you

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CHAMPIONSHIP MANAGER ITALIA '95

Stuart Murray looks at what might be Domark's last ST release

Following in the football boots of Championship Manager '93 (CM93) and the '94 Season Data Disk (as reviewed in New Atari User 68) comes Championship Manager Italia '95, again by Domark Software. This is another football management game for 1-4 players. It is heavily based on CM93 but this time you must strive for success in the worlds' toughest leagues: the Italian Serie A and Serie B.

I played a few games of CM93 a while back on a friend's ST. Italia '95 is basically CM93 repackaged, i.e. it also features a long installation process, buying/selling players, control over backroom staff, team tactics, playing styles and strategies, running commentary during matches, etc., etc. The control and graphics are identical. Everything is held together by a mass of statistics, tables and lists. It is an impressive football management simulation.

For a detailed review of the installation and gameplay of Italia '95 check out Nic Bavington's review of CM93 on pages 56 and 57 of NAU68. There really is no point in repeating the same information so soon after the original review. Only the clubs and players are different in Italia '95. In fact, Italia '95 is effectively a data disk in full-price clothing. It is a blatant attempt to bleed more money from the end user. Yes, the game itself remains excellent but for CM93 owners there is nothing new on offer except the chance to play with Italian clubs and players.

As a football fan, a fan of the Italian league (go Parma!) and someone who does not own CM93 I can say that I really enjoyed Italia '95. It is incredibly addictive and with the ability to use fictional players I can use it for years to come and not have to put up with out of date squads! With the merry-go-round of transfers at the end of every Italian season, the real 95/96 teams will look very different to those on the Italia '95 disk.

Not that it makes much difference anyway because much of the player data on my copy of Italia '95 is incorrect. All of the first names have been mixed up and the positions are quite often wrong, e.g. DARKO Baggio playing in DEFENCE for Juventus! Many players aren't even at the correct clubs and Domark have seen fit to leave Fiorentina, Bari, Brescia and Padova in Serie B despite giving the correct Serie A line-up in the colour poster provided!

These silly mistakes mean that you can only play the game effectively with fictional players. Surely the whole point of releasing a 1995 version of this game is to allow the player to manage the current famous names in Serie A! The mixed-up player and club data make this impossible and part of the enjoyment is lost.

Domark should not be marketing Italia '95 until the player and club data has been correctly updated. Their lack of research is very unprofessional and gives Italia '95 the look of

continued ☛

ITALIA '95
continued



a rushed release ported over from Italia 93/94 on the Amiga.

I telephoned Domark to enquire about the possibility of a fully updated Season 95/96 Data Disk but they told me that there are no plans for such a disk and that Italia '95 would probably be their last release for the ST. Sound familiar? This means it is unlikely that we will see Championship Manager 2 on the ST this autumn. Try contacting Domark to request that an ST version be released. If enough of us contact them, they may reconsider their position.

So there is unlikely to be update disks or future support from Domark. So why buy Italia '95? Well, it's just so damn playable! If you stick with fictional players this game will keep you trying for one more victory over and over again. It's just a pity about the 1995 player data.

If you don't own CM93 or Italia '95 then I advise you to buy one of them. CM93 can now be picked up quite cheap so it may be the best option. Do NOT buy both titles because they are effectively the same game and even great games are not worth buying twice!

I'm off to take Ancona into Serie A, play a pre-season friendly against Aberdeen and then leave to manage Parma. It'll be 4am before I know it!

Title: **CHAMPIONSHIP MANAGER ITALIA '95**

Publisher: **Domark Software, Ferry House, 51-57 Lacy Road, Putney, London SW15 1PR. Tel: (0181) 780 2224.**

Price: **Check around - probably now discounted**

sign up with a service provider and if it's to be used on the Internet it usually takes the form: "username@domain.moreinfo". "Username" is your own unique identifier within your "domain" and may be your name, or account code, or any other unique characteristic. The "domain", separated from your username by the @ sign, is usually the name of your service provider, or company, or university, or whatever. "Moreinfo" consists of one or more additional levels of qualification (each separated by a dot if there's more than one) reflecting the type of establishment and/or country in which the domain resides. By convention a commercial enterprise uses ".co" or ".com" qualifier, educational establishments use ".ac" or ".edu", government departments use ".gov", and other organisations use ".org". Non-USA based domains often include a country code, e.g. ".uk" for UK based domains. My own address, 100256.1577@compuserve.com, uses my CompuServe account number as my username, within the domain called "compuserve", within the commercial enterprise class of domains. Any Internet user anywhere in the world can send me e-mail by specifying this address, and the Internet system software will work out how to deliver it to me.

I normally use my IBM PC for sending e-mail, but again it can be done from an ST or 8-bit system running a standard ASCII communications program. I use an ancient copy of Flash for communications on the ST, and this seems to work OK. Unfortunately, it's not nearly as user friendly as the superb WinCIM software CompuServe provide free for PC and Macintosh users. I haven't actually tried e-mail from my 130XE yet, but I'd expect it to work similarly using an ASCII comms. program. If there's anyone reading this who uses an 8-bit machine for e-mail or other Internet applications, please send me a message at the above e-mail address. I'll include details of any tips you can give in the next issue. ●

contact ... contact ... contact ...

FOR SALE

GAMES: 60 games on cassette for sale. Buyer to collect. £15. Tel. 0181 524 0701

MAGAZINES: Various magazines for sale or swap - Atari User, Page 6, Monitor, Antic, Analog. Tel. Karl on 01226 211042

ORIGINAL ATARI: Atari 800 computer, Basic cartridge, Monkey Wrench II cartridge, with all relevant documentation. No splits. All for £50 inc. carriage. Tel. (01703) 493980 (Southampton)

XL/XE EQUIPMENT: 800XL (Rev. C) with 1010 cassette, power supplies and all leads etc., plus a few games, £25; 130XE with XC12 cassette, two 1050 disk drives, all power supplies and leads etc. XETEC printer interface, 2 lockable disk boxes with approx. 200 disk containing some games but many utilities/serious progs. 50 blank disks. Many books and magazines. SAE for full list. £120 or will split. Contact John Bunting, 101 Windsor Drive, Wingerworth, Chesterfield, Derbyshire S42 6TQ. Tel. (01246) 238187

WANTED

PADDLES ETC.: Atari paddles type joysticks. Also 130XE and most types of hardware add-on. Tel. Chris on 01343 551379

FS2: Wanted - Flight Simulator II on disk with manual. Please contact N.A. Nicholaides, 13 Gr. Thelogou str., Athens 114-71, Greece.

PENPALS/HELP

CALLING SIMON: Simon Reeder from South Yorkshire. Please contact me, I still have one of your cassettes and you have one of mine! Does anyone know if Simon is still on the Atari scene? Contact Kevin Cooke at 36 Buddle Lane, St. Thomas, Exeter, Devon EX4 1JH

FREE TO SUBSCRIBERS

The CONTACT column is free of charge to subscribers who wish to sell their equipment or contact other readers. Space is limited so we request that entries be kept as short as possible. Extremely long entries may be heavily edited or ignored. Send your CONTACT notice on a separate sheet of paper (not as part of a letter) to:

CONTACT, PAGE 6 PUBLISHING, STAFFORD, ST16 1DR

FOR SALE ... WANTED ... PEN PALS ... ADVICE ... HELP

PROGRAM LISTINGS

As most program listings would take up several pages of NEW ATARI USER we no longer publish those listings within the magazine. The programs are available ready to run on the Issue Disk which is available for each issue, details of which are found on the DISK BONUS page. If you prefer to type the programs in yourself, every listing, complete with TYPO codes, is available to subscribers free of charge. Either drop us a line or telephone and ask for the listings you require quoting the Issue number and the title.

Write to *LISTINGS, NEW ATARI USER, P.O. BOX 54, STAFFORD, ST16 1DR or telephone 01785 41153*